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MiniMed™ 640G

System User Guide

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MiniMed™ 640G

System User Guide

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Glossary

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before you begin

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1 Before you begin

This user guide is designed to help you understand the operation of your MiniMed™ 640G system. Work closely with your healthcare professional when starting insulin pump therapy.

Using this user guide

This user guide contains valuable information about using your new insulin pump. To help you find the information you need, you can use the table of contents at the beginning of the user guide and the index at the end of the user guide. There is also a glossary of terms, which starts on *page 277*.

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The following table describes certain terms, conventions, and concepts used in this user guide.

Convention	What it means
Select	To activate a screen item, accept a value, or initiate an action.
Select and hold	To perform an action using your pump screen, press the Select button and hold until the action is complete.
Press	To push and then release a button.
Press and hold	To push and keep pressure on a button.
Bold text	To indicate screen items and buttons. For example, "Select **Next** to continue."

Convention	What it means
Note	**Note:** A note provides helpful information.
Caution	**Caution:** A caution notifies you of a potential hazard which, if not avoided, may result in minor or moderate injury or damage to the equipment.
WARNING	**WARNING: A warning notifies you of a potential hazard which, if not avoided, could result in death or serious injury. It may also describe potential serious adverse reactions and safety hazards.**

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Emergency kit

Keep an emergency kit with you at all times to make sure that you always have necessary supplies. Tell a family member, co-worker, or friend where you keep your emergency kit.

It is important that you test your blood glucose (BG) more frequently while you are traveling. The routine hassle of travel, including stress, changes in time zones, schedules and activity levels, meal times and types of food, can all affect your diabetes control. Be extra attentive to monitoring your BG frequently, and be prepared to respond if needed.

Your emergency kit should include these items:

- Fast-acting glucose tablets.
- Blood glucose monitoring supplies.
- Urine or blood ketone monitoring supplies.
- Extra MiniMed-compatible infusion set and MiniMed reservoir.
- Extra new AA lithium or alkaline batteries, or fully charged NiMH batteries.

- Insulin syringe and fast-acting insulin (with dosage instructions from your healthcare professional).
- Wallet card (packaged with your pump accessories).
- Adhesive dressing.
- Glucagon emergency kit.

WARNING: Do not use the Bolus Wizard™ to calculate a bolus for a period of time after giving a manual injection of insulin by syringe or pen. Manual injections are not accounted for in the active insulin amount. Therefore, the Bolus Wizard could prompt you to deliver more insulin than needed. Too much insulin may cause hypoglycemia. Consult with your healthcare professional for how long you need to wait after a manual injection of insulin before you can rely on the active insulin calculation of your Bolus Wizard.

For details on pump safety, see *User safety, on page 5*.

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User safety

Indications

MiniMed 640G system

The MiniMed 640G system is indicated for the continuous delivery of insulin, at set and variable rates, for the management of diabetes mellitus in persons requiring insulin. In addition, the system is indicated for continuous or periodic monitoring of glucose levels in the fluid under the skin, and detecting possible low and high glucose episodes. When using a sensor and transmitter, the pump displays continuous sensor glucose values and stores this data so that it can be analyzed to track patterns and improve diabetes management. This data can be uploaded to a computer for analysis of historical glucose values.

The continuous sensor glucose values provided by the MiniMed 640G system are not intended to be used directly for making therapy adjustments. Rather, they provide an indication that a confirmation fingerstick measurement may be required. All therapy adjustments should be based on measurements obtained using a home blood glucose monitor and not based on the value displayed by the pump.

Contraindications

Pump therapy is not recommended for people who are unwilling or unable to perform a minimum of four blood glucose tests per day.

Pump therapy is not recommended for people who are unwilling or unable to maintain contact with their healthcare professional.

Pump therapy is not recommended for people whose vision or hearing does not allow recognition of pump signals and alarms.

General warnings

Pump

The pump is not suitable for use in the presence of a flammable anesthetic mixture with air, oxygen, or nitrous oxide.

Never rely on the pump beeps or vibrations alone to navigate through the pump screens or menus because this may result in incorrect menu selection or setting.

Do not rely on preset pump alarms or reminders alone to prompt you to check your blood glucose. Set additional reminders on other devices, such as your cell phone, to avoid forgetting to check your blood glucose.

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Standard Luer sets are not compatible with the MiniMed 640G insulin pump. MiniMed reservoirs and MiniMed-compatible infusion sets are specifically designed for use with the MiniMed 640G insulin pump. Do not modify your MiniMed reservoir or MiniMed-compatible infusion set.

Only use U100 insulin that has been prescribed by your healthcare professional for use with an infusion pump. Do not put any other drugs or medications inside your reservoir for use with this pump.

Make sure the infusion set is disconnected from your body before you rewind your pump or fill the infusion set tubing. Never insert the reservoir into the pump while the tubing is connected to your body. Doing so could result in an accidental infusion of insulin.

Do not insert the reservoir in the pump if you did not rewind your pump. Doing so could result in an accidental infusion of insulin.

While the infusion set is connected to your body, do not unscrew or retighten the tubing connector on the reservoir.

Do not use the MiniLink™ transmitter (MMT-7703) with the MiniMed 640G insulin pump as this device does not communicate with this insulin pump.

Do not modify this product, as modification could result in a safety hazard.

Do not use your pump if the screen appears broken or unreadable. In some instances, impact to the pump can damage the screen while the buttons continue to function. If the screen is broken or unreadable, do not press any buttons. Remove the pump and begin using your backup insulin plan per the direction of your healthcare professional. If the pump is accidentally programmed while the screen is broken or unreadable, this could result in high or low blood glucose levels. If your screen is damaged, contact the 24 Hour HelpLine or your local representative to arrange for shipment of a replacement pump.

Exposure to magnetic fields and radiation

WARNING: Keep the pump away from magnetic fields and avoid direct contact with any magnets.

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If you are going to have an X-ray, MRI, diathermy treatment, CT scan, or other type of exposure to radiation, take off your pump, sensor, transmitter, and meter before entering a room containing any equipment of this kind. The magnetic fields and radiation in the immediate vicinity of this equipment can make your devices nonfunctional or damage the part of the pump that regulates insulin delivery, possibly resulting in over delivery and severe hypoglycemia.

Do not expose your pump to a permanent magnet, such as pump cases that have a magnetic clasp. Exposure to a permanent magnet may interfere with the motor inside the pump.

Reservoir and infusion sets

Only use reservoir and infusion sets manufactured by Medtronic Diabetes. The pump has undergone extensive testing to confirm appropriate operation when used with compatible reservoirs and infusion sets manufactured or distributed by Medtronic Diabetes. We cannot guarantee appropriate operation if the pump is used with reservoirs or infusion sets offered by third parties. We are not responsible for any injury or malfunctioning of the pump that may occur in association with such use.

Only use U100 insulin that has been prescribed by your healthcare professional for use with an infusion pump. Do not put any other drugs or medications inside your reservoir for use with this pump.

For additional warnings related to the reservoir and infusion set, refer to the user guides provided with those devices.

Sensor

While there is no evidence of an Enlite™ sensor breaking in a patient's body, if you suspect that sensor breakage has occurred, do not attempt to remove the sensor yourself. Contact your healthcare professional for assistance in removing the sensor.

For warnings related to the sensor, refer to the user guide provided with that device.

Transmitter

Keep the transmitter away from children. This product contains small parts and may pose a choking hazard.

For warnings related to the transmitter, refer to the user guide provided with that device.

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Meter

For warnings related to compatible Bayer™ meters, refer to the user guide provided with that device.

General precautions

Although the pump has multiple safety alarms, it cannot notify you if the infusion set is leaking or the insulin has lost its potency. It is essential, that you test your blood glucose levels at least four times per day. If your blood glucose is out of range, check the pump and the infusion set to ensure that the necessary amount of insulin is being delivered.

Waterproof capabilities

At the time of manufacture and when the reservoir and tubing are properly inserted, your pump is waterproof. It is protected against the effects of being underwater to a depth of up to 3.6 meters (12 feet) for up to 24 hours.

If the pump is dropped, hit against a hard object, or otherwise damaged, the waterproof characteristics of the outer casing of the pump may be compromised. If your pump has been dropped or you suspect your pump is damaged, carefully inspect your pump to ensure there are no cracks before exposing your pump to water.

If you believe that water has entered your pump or you observe any other possible pump malfunction, check your blood glucose, and treat high blood glucose as necessary, using an alternative source of insulin. Contact your local representative for further assistance. Always contact your healthcare professional if you experience excessively high or low blood glucose levels or if you have any questions about your care.

Electrostatic discharge

Although your MiniMed 640G insulin pump is designed to be unaffected by typical levels of electrostatic discharge (ESD), very high levels of ESD can result in a reset of the pump's software and a pump error alarm. After clearing the alarm, verify that your pump is set to the correct date and time and that all other settings are programmed to the desired values because the software reset could erase your previously programmed settings.

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For more information on pump alarms, see *Pump alarms, alerts, and messages, on page 202*. For more information on re-entering your pump settings, see *My pump is asking me to enter my settings, on page 232*. If you are unable to re-enter your pump settings, or otherwise believe there is a problem with your pump, contact your local representative.

Avoid extreme temperatures

Exposure to extreme temperatures can damage your device, which can adversely affect safety and effectiveness of your device. Avoid the following conditions:

1. Avoid exposing your pump to temperatures above 40 °C (104 °F) or below 5 °C (41 °F) because this may damage your device.
2. Insulin solutions freeze near 0 °C (32 °F) and degrade at high temperatures. If you are outside in cold weather, wear your pump close to your body and cover it with warm clothing. If you are in a warm environment, take measures to keep your pump and insulin cool.

3. Do not steam, heat, sterilize, or autoclave your pump. Exposure to high temperatures may damage your device.

Lotion, sunscreen, and insect repellent

Some skin care products, such as lotion, sunscreen, and insect repellents, can cause damage to plastics, which is a material used in your pump case. After using such products, be sure to wash your hands prior to handling your pump. If you get any skin care products or insect repellents on your pump, wipe them off as soon as possible with a damp cloth and mild soap. For instructions on cleaning your pump, see *Cleaning your pump, on page 241*.

Infusion sets and sites

For precautions related to the infusion sets and sites, refer to the user guides provided with those devices.

Sensor

For precautions related to the sensor, refer to the user guide provided with that device.

Transmitter

For precautions related to the transmitter, refer to the user guide provided with that device.

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Meter

For precautions related to compatible Bayer™ meters, refer to the user guide provided with that device.

Adverse reactions

For adverse reactions related to the sensor, refer to the user guide provided with that device.

Notice

Radio Frequency (RF) communication

This device complies with the United States Federal Communications Commission (FCC) and international standards for electromagnetic compatibility.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

These standards are designed to provide reasonable protection against excessive radio frequency interference, and prevent undesirable operation of the devices from unwanted electromagnetic interference.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.

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This device can generate, use, and radiate radio frequency energy and, if installed and used in accordance with the instructions, may cause harmful interference to radio communications. If the device does cause interference to radio or television reception, you are encouraged to try to correct the interference by one or more of the following measures:

- Decrease the distance between the transmitter and the insulin pump to 1.8 meters (6 feet) or less.
- Decrease the distance between the meter and the insulin pump to 1.8 meters (6 feet) or less.
- Increase the separation between the transmitter and the device that is receiving/emitting interference.

If other devices that employ radio frequencies are in use, such as cell phones, cordless phones, and wireless networks, they may prevent communication between the transmitter and the insulin pump. This interference does not cause

any incorrect data to be sent and does not cause any harm to your devices. Moving away from, or turning off, these other devices may enable communication. If you continue to experience RF interference, please contact your local representative.

Caution: Changes or modifications to the internal RF transmitter or antenna not expressly approved by Medtronic could void the user's authority to operate this insulin delivery system.

Directive 1999/5/EC

Medtronic declares that this product is in conformity with the essential requirements of Directive 1999/5/EC on Radio and Telecommunications Terminal Equipment.

For additional information, contact Medtronic MiniMed at the address or phone number provided on the back cover.

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For Canada only

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Keeping track of your system information

The serial number (SN) is located on the back of your pump. If you are using the belt clip, you need to remove the belt clip to view the serial number. It also displays in your Pump status screen. For more details on the status screens, see *Status screens, on page 31*. For future reference, enter the serial number of your pump and the purchase date in the following table:

Pump serial number and purchase date
Serial Number:
Purchase Date:

Insulin guidelines

WARNING: Never start on insulin until directed by your healthcare professional. Doing so could result in an unintended delivery of insulin, which may cause hypoglycemia.

The pump is intended for use with U100 insulin. The following insulins have been tested by Medtronic Diabetes and found to be safe for use with the MiniMed 640G insulin pump:

- Humalog™
- NovoLog™
- NovoRapid™

Before using different insulin with this pump, check the insulin label to make sure the insulin can be used with the pump.

RELEASED

Consumables

The pump uses disposable (single-use) MiniMed reservoirs and infusion sets for insulin delivery.

WARNING: Only use reservoir and infusion sets manufactured by Medtronic Diabetes. The pump has undergone extensive testing to confirm appropriate operation when used with compatible reservoirs and infusion sets manufactured or distributed by Medtronic Diabetes. We cannot guarantee appropriate operation if the pump is used with reservoirs or infusion sets offered by third parties and therefore we are not responsible for any injury or malfunctioning of the pump that may occur in association with such use.

- **Reservoirs** – Use only Medtronic reservoirs. For the MMT-1511 pump model, use the MMT-326A, 1.8 ml (180-unit) reservoir.

  Look on the back of your pump for your model number.

  For the MMT-1711 pump model, use either the MMT-332A, 3.0 ml (300-unit) reservoir or the MMT-326A, 1.8 ml (180-unit) reservoir, depending on your insulin needs.
- **Infusion sets** – Medtronic Diabetes provides a variety of infusion sets to fit your needs. Contact your healthcare professional for help in choosing an infusion set. Change your infusion set every two to three days per your infusion set manufacturer's instructions.

Optional devices

- **Compatible Bayer blood glucose meter** – The 640G system comes with a compatible Bayer blood glucose meter. It wirelessly connects to your pump, allowing you to send BG meter readings to your pump. The Remote Bolus feature allows you to use your meter to start a bolus on your pump. You can also use this meter to upload system data to your diabetes management software using the USB port on your computer. For more details, see your meter user guide.

RELEASED

Note: The compatible Bayer meter may not be available in all countries.

- **Guardian™ 2 Link transmitter (MMT-7731)** – used with your pump for Continuous Glucose Monitoring (CGM). A device that connects to a glucose sensor. The transmitter collects data measured by the sensor and wirelessly sends this data to monitoring devices.
- **Enlite glucose sensor (MMT-7008)** – used with your pump for CGM. The small part of the continuous glucose monitoring system that you insert just below your skin to measure glucose levels in your interstitial fluid. The sensor is a single-use device.
- **CareLink™ USB (MMT-7306)** – used to upload system data to the diabetes management software using a USB port on your computer.

Accessories

The following accessories may be used with your MiniMed 640G system.

- **Belt clip (ACC-1599)** – used to wear the pump on your belt. Also, you can use the tip of the belt clip to open the battery compartment on your pump.
- **Activity guard (ACC-1520)** – used if you are active in sports, or if a child is wearing the pump. Using the activity guard prevents the reservoir from being rotated or removed from the pump.
- **Skins** – used to personalize the look of your pump. Skins are decorative overlays. Your pump is designed to have skins attached to the back of the pump and the front of the belt clip. Skins also provide additional protection against surface scratches.

Ordering supplies and accessories

To order supplies or accessories, contact your local representative.

RELEASED

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2

first steps

RELEASED

RELEASED

2 First steps

This chapter gives you an overview of your pump so you can become familiar with the buttons and screens. Read this entire chapter to understand the basic features and initial setup before using your pump to deliver insulin.

Your pump

The following illustration shows the different parts of your pump. The reservoir, with the tubing connector attached, is inserted into the reservoir compartment.

RELEASED

Using the buttons

Caution: Do not use sharp objects to press the buttons on your pump. Using sharp objects can damage your pump.

The following picture shows the buttons, the notification light, and the light sensor on your pump. The notification light flashes when your pump has an alarm or alert. The notification light is not visible unless flashing.

The keypad has a backlight that lights up the buttons when in use.

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Note: Do not cover the light sensor with your finger while using your pump. Covering the light sensor may adjust the brightness on the screen when brightness is set to Auto. See *Display Options, on page 141* for more information.

The following table describes how to use the buttons.

To do this:	Follow these steps:
Scroll up or down a menu or list, or increase or decrease the value of a setting.	Press the ∧ or ∨ buttons.
Select an item on a screen or menu.	Press the ∧, ∨, <, or > buttons to select the desired item, and then press the ○ button.
Enter a value into a field.	Press the ∧, ∨, <, or > buttons to select the desired field, and then press the ○ button. The field you select flashes. Press the ∧ or ∨ buttons to enter the desired value, and then press the ○ button.
Return to the previous screen.	Press the ↩ button.
Display the Menu screen.	Press the ☰ button.
Display the Home screen.	When you are on any screen other than the Home screen, press and hold the ↩ button for about one second.
Put the pump in sleep mode.	Press and hold ☰ for about two seconds.
Wake up the pump.	Press any button.

RELEASED

About batteries

The pump requires one new AA (1.5 V) battery. For best results, use a new AA lithium (FR6) battery. The pump also accepts an AA alkaline (LR6) or a fully charged AA NiMH (HR6) nickel-metal hydride rechargeable battery.

Caution: Do not use a carbon zinc battery in your pump.

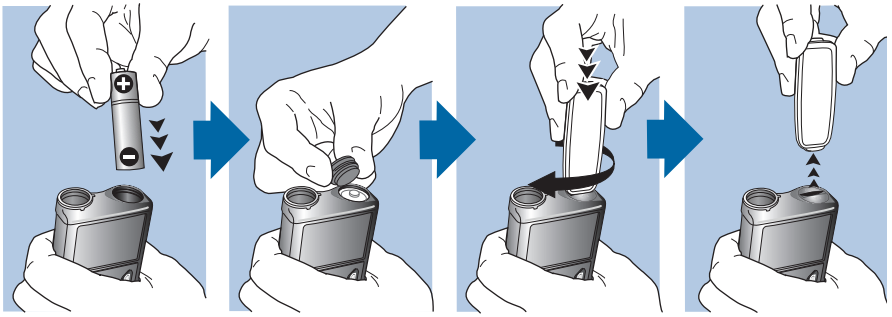
Note: Do not use cold batteries because the battery life may incorrectly appear as low. This can cause a Battery Failed alarm on your pump. Allow cold batteries to reach room temperature before you insert them in your pump.

Inserting the battery

Your pump does not ship with the battery cap on. The battery cap is located in the pump box, separate from the pump.

To insert the battery:

1. Insert the new or fully charged AA battery, making sure to insert the negative end (–) first. After you insert the battery, the positive end (+) is visible.



2. Use the belt clip to tighten the battery cap.

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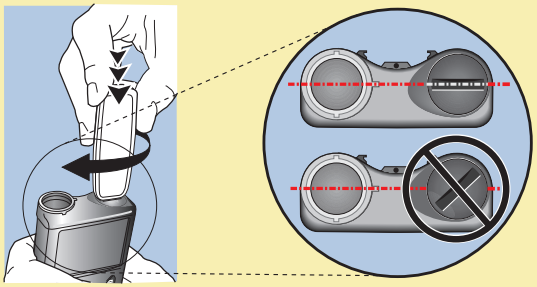
Caution: Do not overtighten or undertighten the battery cap. Overtightening the battery cap can cause damage to your pump case. Undertightening the battery cap will prevent the pump from recognizing the new battery. Turn the battery cap clockwise until the cap is aligned horizontally with the pump case, as shown in the following example.



3. If this is the first time you have inserted a battery in your pump, the Startup Wizard begins. For more information about the Startup Wizard, see *Entering your startup settings, on page 24*. If this is not the first time you have inserted a battery into your pump, the Home screen appears and the pump resumes your basal delivery.

Removing the battery

Caution: Do not remove the battery unless you are inserting a new one, or if you are storing your pump. Your pump cannot deliver insulin while the battery is removed. After removing an old battery, be sure to replace it with a new battery within 10 minutes to clear the Insert battery alarm and avoid a Power loss alarm. If power loss occurs, you must re-enter your time and date settings.

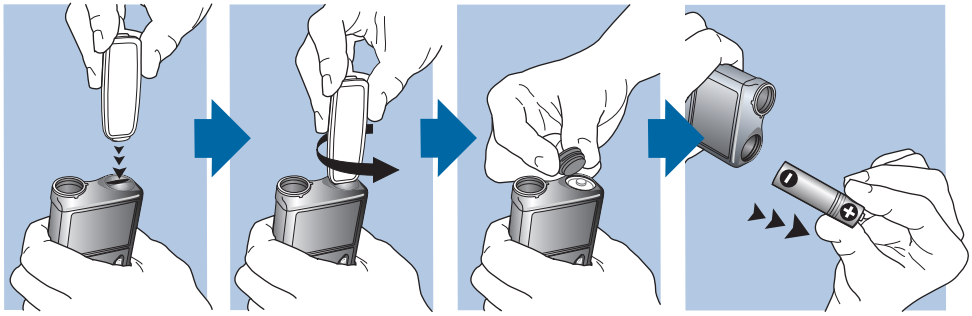
To remove the battery:

1. Before removing a battery from your pump, clear any active alarms or alerts.
2. Use the belt clip to loosen and remove the battery cap.

RELEASED

Note: Use your belt clip to remove and retighten the battery cap. If the belt clip is unavailable, you may use a coin.

3. Remove the battery.



4. Dispose of old batteries according to local disposal requirements.
5. After removing your battery, wait until the Insert Battery screen appears before inserting a new battery.

If you are removing the battery to place your pump in storage, see *Storing your pump, on page 242* for more information.

Getting to know your pump

This section shows you how to navigate through the screens and menus on your pump. It also helps you learn how to enter information and view the status of your pump.

Entering your startup settings

Your pump has a Startup Wizard that begins when you insert your battery for the first time. The Startup Wizard guides you through setting the language, the time format, the current time, and the current date.

Note: Use this procedure when you are entering your settings for the first time. If this is not the first time you are entering your pump settings, and your pump is asking you to re-enter your settings, see *My pump is asking me to enter my settings, on page 232*.

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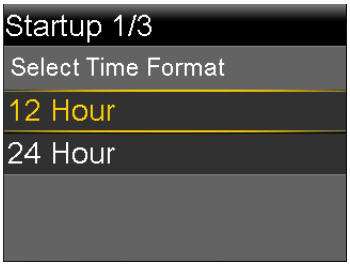
To use the Startup Wizard:

1. The Startup Wizard begins after the Welcome screen appears. When the Language screen appears, select your language.

2. When the Select Time Format screen appears, select a **12 hour** or a **24 hour** time format.



3. When the Enter Time screen appears, adjust the setting to the current time. If you are using a 12-hour clock, be sure to specify AM or PM. Select **Next**.

4. When the Enter Date screen appears, adjust the **Year**, **Month** and **Day** to the current date. Select **Next**.

A message confirms that your initial setup is complete, and then the Home screen appears.

After you enter your initial settings, see the following sections in this chapter to become familiar with the buttons and screens on your pump.

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Unlocking your pump

Your pump automatically locks when entering sleep mode. When you wake up your pump from sleep mode, you must unlock your pump before navigating away from the Home screen. When you press menu or select , you will be shown a screen asking you to unlock your pump. Press the highlighted button to unlock your pump.

The pump will take you to your selected screen after you press the correct button. If you press an incorrect button, the following screen appears and you will need to select **OK** to return to your Home screen and try again.

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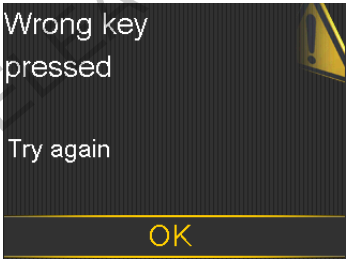
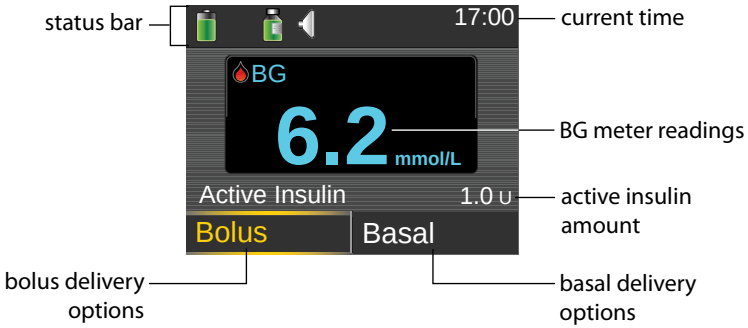


After your pump is unlocked, it will remain unlocked until you re-enter sleep mode. For information about the different power modes, or to put your pump to sleep, see *Power modes, on page 34*.

Home screen

The Home screen appears by default after you change the battery, when you wake the pump from sleep mode, and when you are not actively using another screen. You can navigate to the Home screen from any other screen by pressing and holding the button for about one second.

To see what your Home screen looks like if you use a sensor, see *Home screen with CGM, on page 153*.



The following items appear on your Home screen:

Item	Description
Status bar	Displays icons that show a quick status of your pump system. For more information, see *Status bar, on page 28*. By selecting the status bar you can access more detailed status screens. For more information, see *Status screens, on page 31*.
Current time	Displays the current time of day. For details on setting the time, see *Time and date, on page 148*.
BG meter readings	If you have taken a BG meter reading using your compatible Bayer meter or manually entered a BG meter reading within the last 12 minutes, the BG meter reading appears on the Home screen. You can enter your BG meter reading manually using the Event Markers feature, or when you use the Bolus Wizard to deliver a bolus. For details on using the Bolus Wizard, see *Bolus Wizard, on page 65*. For details on entering events, see *Event Markers, on page 124*.
Active Insulin	Displays the amount of bolus insulin the pump estimates is still working to lower your blood glucose levels. For more details on active insulin, see *About active insulin, on page 72*.

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Item	Description
Bolus	Allows you to access your bolus delivery options, and provides access to all of your insulin settings. For details about entering your bolus settings and delivering bolus insulin, see the Bolus chapter on *page 59*. If you have not set up the Bolus Wizard and Preset Bolus features, you only have access to Manual Bolus from this screen. For details about setting up the Bolus Wizard feature, see *Bolus Wizard, on page 65*. For details about setting up the Preset Bolus feature, see *Preset Bolus, on page 86*.
Basal	Allows you to access your basal delivery options, and provides access to all of your insulin settings. For details about entering your basal settings and delivering basal insulin, see the Basal chapter on *page 39*. To access all of your basal options from this screen, you must have set up a Preset Temp basal rate. For details about setting up Preset Temp basal rates, see *Preset Temp basal rates, on page 49*.

Status bar

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The status bar appears at the top of the Home screen to provide a way for you to quickly check the status of your system. The status bar contains the icons that are described in the following table, along with the current time. For information on viewing detailed status screens, see *Status screens, on page 31*.

Icon	Icon name	What it means
	Battery	The charge level of your pump battery. The color and the fill level of the icon indicate the status. When your battery is full, the icon is solid green. As your battery life is used, the icon changes, as shown in the following example. For more details about batteries, see *About batteries, on page 21*.

Icon	Icon name	What it means
	Connection	The connection icon appears green when the Sensor feature is on and your transmitter is successfully communicating with your pump. The connection icon appears gray when the Sensor feature is turned on, but the transmitter is not connected or communication with your pump has been lost. For more information about the Sensor feature, see *Understanding Continuous Glucose Monitoring (CGM), on page 151*.
	Airplane Mode	Appears in place of the Connection icon if Airplane Mode is turned on. When Airplane Mode is turned on, the pump cannot receive wireless communication from other devices. The pump also cannot send wireless communication to other devices. For more information about using Airplane Mode, see *Airplane Mode, on page 137*.
	Reservoir	Shows the approximate amount of insulin left in your reservoir. The color and the fill level of the icon indicate the status. When your reservoir is full, the icon is solid green. As your insulin is used, the icon becomes emptier, and the color of the icon changes as shown in the following example. For more information about your reservoir, see *Reservoir and infusion set* on *page 93*.
	Audio	The audio mode you are using: vibrate only , audio only , or vibrate and audio . For more information about your audio settings, see *Audio Options, on page 138*.

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Icon	Icon name	What it means
	Calibration	The approximate time left until your next sensor calibration is due. Appears only when the Sensor feature is turned on. The color and the fill level of the icon indicate the status. When your sensor is fully calibrated, the icon is solid green. As the time for your next sensor calibration approaches, the icon becomes emptier, and the color of the icon changes as shown in the following example. For more information about calibrating your sensor, see *Calibrating your sensor, on page 184*. When your sensor is initializing, the Calibration icon appears with three dots . If the time to your next sensor calibration is unavailable, the Calibration icon appears with a question mark .
	Sensor Life	The number of days remaining in the life of your sensor. Appears only when the Sensor feature is turned on. The color and the fill level of the icon indicate the status. When you insert a new sensor, the icon is solid green. As your sensor life is used, the icon becomes emptier. The icon turns yellow when less than 24 hours remains in the life of your sensor. It turns red when less than 12 hours remains in the life of your sensor. If the number of days remaining in the life of your sensor is unavailable, the Sensor Life icon appears with a question mark .

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Icon	Icon name	What it means
	Block Mode	Indicates that the pump is in Block Mode, and that certain functions are restricted. Caregivers, such as parents of a young child, can use Block Mode to restrict access to critical pump settings. For more information about Block Mode, see *Block Mode, on page 139*.
	Temporary Network Connection	Appears while you are temporarily connected to a remote upload device.

Status screens

The Status screens provide information about your pump, any notifications you have received, your current settings, and optional sensor. The Status screens are described in the following table:

Status screen	Displays this information
Notifications	A list of alarms, alerts, and reminders that have occurred over the past 24 hours. You can display further details about a particular alarm, alert, or reminder by selecting it from the list. For more information on alarms and alerts, see the *Alarms, alerts, and messages* chapter.
Quick Status	A summary of status information, including your last bolus, last BG meter reading, current basal rate, reservoir level, and pump battery charge level. If you are using a sensor, this screen also displays the time that your next calibration is due and the SmartGuard™ status.
Pump	Provides a detailed view of your pump status, including whether your pump is in a specific mode, the reservoir status, battery status, the pump serial number, and other details about your pump.
Sensor	The Sensor status screen is available only if your sensor feature is turned on. The Sensor status screen indicates if any alert silence options are turned on. It also shows the status of your calibrations, your sensor life, ISIG, transmitter battery, serial number and version number of your transmitter, and the SmartGuard status.

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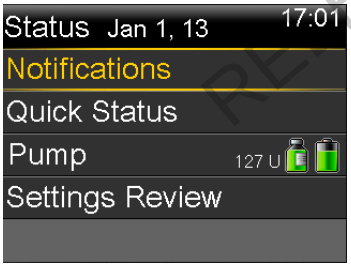
Status screen	Displays this information
Settings Review	The Settings Review screen provides a list of all your pump settings. The settings are organized by where they appear in the menu for your pump. For example, your bolus settings appear under the Insulin Settings section, and your brightness level setting appears under the Utilities section.

Viewing the Status screens

1. Go to the Home screen.
2. Select the status bar that appears at the top of the Home screen.

The Status screen appears.



3. Select the status screen that you want to view. Refer to the table at the beginning of this section for a description of the different status screens.

Using the Menu screen

The Menu screen is where you access the various features and functions of your system. To display the Menu screen, press .

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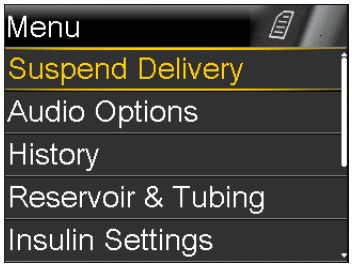

The following options are available from the Menu screen:

Select this	To do this
Suspend Delivery	Stop your current basal and bolus insulin delivery.
Audio Options	Set your audio, vibrate, and volume options for the notifications you receive.
History	Access the Summary, Daily History, and Alarm History screens. If you are using a sensor, you can access the SG Review and ISIG History screens.
Reservoir & Tubing	Start the process of changing your reservoir and infusion set.
Insulin Settings	Set up and manage your insulin delivery options, including your Basal and Bolus settings.
Sensor Settings	Set up your optional continuous glucose monitoring device settings.
Event Markers	Save information about events, such as exercise, blood glucose readings, carbs you eat, or injections you take. If you are using a sensor, the blood glucose readings may be used for calibration.
Reminders	Set up reminders to help monitor your system and to help you manage your diabetes. You can also create reminders for personal events.
Utilities	Set up and manage the features and functions of your system.

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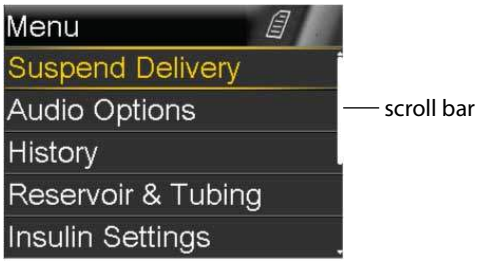
Scroll bar

The scroll bar is located on the right side of the display, as shown in the following example. It appears only when there is more information available to view on the screen. Press ∧ or ∨ to move up or down the screen.



Power modes

Your pump is designed to conserve battery power when you are not actively using the pump screens.

In this mode	Your pump behaves like this
Awake	Your pump screen is on. Unless you are actively using another screen, your Home screen appears. To wake up your pump from being in power save or sleep mode, press any button. If your pump has been in sleep mode, the pump is locked. To unlock your pump, see *Unlocking your pump, on page 26*.
Power save	Your pump is fully functional, but the screen goes dark to save power. You can set how long it takes for your screen to enter power save mode by changing the Backlight setting. For more information, see *Display Options, on page 141*. If any button is pressed while the pump is in Power save mode, the pump returns to the screen that was last displayed.

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In this mode	Your pump behaves like this
Sleep	Your pump automatically enters sleep mode about two minutes after your pump enters power save mode if no buttons are pressed. At this time, your pump automatically locks. If any button is pressed, your pump returns to the Home screen. **Note:** In some cases, if there is an action you need to take, your pump returns to the screen last displayed. This includes startup settings, loading your reservoir, filling your tubing, filling your cannula, and any screen where you have an action pending. To put your pump into sleep mode, press and hold the **Menu** button for about two seconds.

If you remove your pump

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You may have an occasion when you need or want to remove your pump. If you have to remove and store your pump, it is recommended that you do the following:

- Write down a record of your current basal rates and use the Save Settings feature. See *Saving your settings, on page 142* for more information.
- Remove the battery. See *Storing your pump, on page 242* for more information.

Remember, your body still needs insulin while your pump is removed.

Consult your healthcare professional to determine an alternate method of receiving insulin. Disconnecting from your pump for less than one hour may not require an insulin adjustment. If you remove your pump for more than one hour, you should take your insulin another way, as prescribed by your healthcare professional.

RELEASED

3

basal

RELEASED

RELEASED

3 Basal

Basal insulin is the "background" insulin that you need throughout the day and night to maintain your target blood glucose values when you are not eating. Your basal insulin accounts for approximately one half of your daily insulin requirements. Your pump mimics a pancreas by delivering insulin continuously over 24 hours.

Your basal insulin is delivered according to a basal pattern. Basal patterns and other basal settings are described in the following sections.

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Basal rate

Your basal rate is the specific amount of basal insulin that your pump continuously delivers each hour. While some people use one basal rate all day, others require different rates at different times of the day.

Your basal rates are set in one or more basal patterns. Each basal pattern covers 24 hours. For specific information about basal patterns, see *Basal patterns, on page 41*.

Basal insulin settings

Your basal insulin delivery settings are described in the following table.

Setting	What it is	What it does for you
Basal Pattern	A set of one or more basal rates that cover a 24-hour period.	Determines the amount of insulin you receive per hour throughout the day and night. Allows you to vary your basal rate according to your needs. You can set up to eight basal patterns. For details on setting up basal patterns, see *Adding a new basal pattern, on page 42*. For details about starting a basal pattern, see *Changing from one basal pattern to another, on page 46*.
Temp Basal	A basal rate that you use in place of your scheduled basal rate for short-term situations.	Allows you to temporarily change your current basal rate for a duration of time that you specify. For details about starting a temp basal rate, see *Starting a Temp Basal rate, on page 48*.
Preset Temp	A temporary basal rate that you can define ahead of time.	Allows you to set and save temporary basal rates for known short-term situations, such as when you are sick or have times of increased or decreased activity. For details about setting up a preset temp basal rate, see *Preset Temp basal rates, on page 49*. For details about starting a preset temp basal rate, see *Starting a Preset Temp basal rate, on page 51*.
Max Basal Rate	Maximum amount of basal insulin that your pump can deliver per hour.	Provides a safety measure by limiting the total amount of basal insulin your pump can deliver per hour. For details about setting your Max Basal rate, see *Max Basal Rate, on page 41*.

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Max Basal Rate

Max Basal Rate limits the amount of basal insulin that can be delivered per hour, based on the maximum rate you set. You are unable to set any basal rates, temp basal rates, or preset temp basal rates that exceed the max basal rate amount. You can set your max basal rate from 0 to 35 units per hour. Set your max basal rate as prescribed by your healthcare professional.

Note: If you are setting your max basal rate after you have set up your basal patterns or preset temp basal rates, you cannot set your max basal rate lower than any of your existing basal rates. You cannot access this feature during a bolus delivery.

To set your Max Basal Rate:

1. Go to the Max Basal/Bolus screen.

   Menu > Insulin Settings > Max Basal/Bolus

2. Select **Max Basal** to set the maximum number of basal insulin units that can be delivered each hour.

   Because the Max Basal Rate setting determines your basal insulin limits, a warning message appears any time you enter the screen to change the value. To continue setting the value, select **Continue**.

3. In the Max Basal Rate screen, select **Max Basal** to set the maximum units per hour.

4. Select **Save**.

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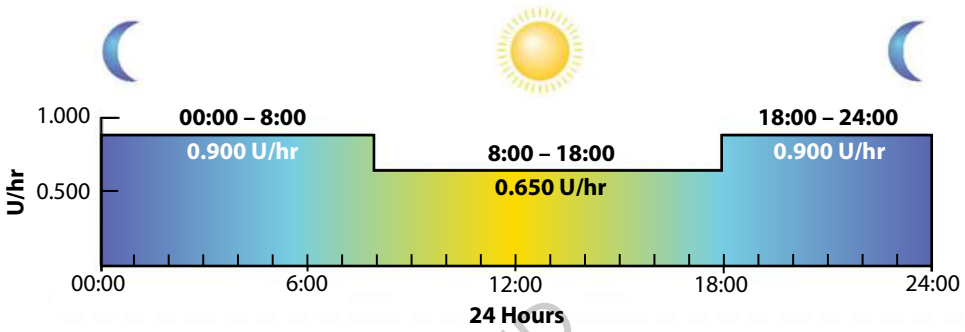
Basal patterns

Your basal pattern determines the amount of basal insulin you receive throughout the day and night. Because your basal insulin needs can vary, you can set up to eight basal patterns. For example, you might use one basal pattern during the week and a different basal pattern during the weekend.

A basal pattern is made up of one to 48 basal rates that you set up to cover a full 24-hour period. If you only need one basal rate throughout the day, you set only one rate for the 24-hour period. If you need the basal rates to change during the day or night to better match your insulin needs, you can set more than one rate, each with a separate start and end time.

The following example represents one basal pattern with three basal rates set for three different time periods.



Your healthcare professional will determine what rates are right for you.

Note: If you have already set up basal patterns and want to switch from using one basal pattern to another, see *Changing from one basal pattern to another, on page 46*.

Adding a new basal pattern

This procedure shows you how to add a new basal pattern.

To add a new basal pattern:

1. Go to the Basal Pattern Setup screen.

   Menu > Insulin Settings > Basal Pattern Setup

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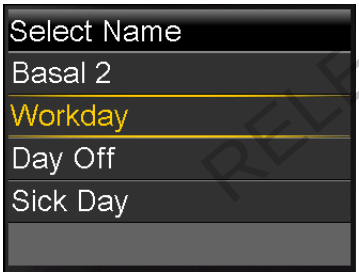
The Basal Pattern Setup screen appears. Your active basal pattern appears with a check mark and the 24-hour delivery amount, as shown in the following example.

2. If this is your first time setting up a basal pattern, the unit amount will be 0.0. Select **Basal 1** and proceed to step 5.

   If this is not your first time setting up a basal pattern, proceed to the next step to add a new pattern.

3. To add a new basal pattern, select **Add New**.

   The Select Name screen appears.



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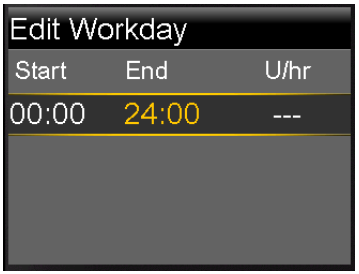
Note: The Workday, Day Off, and Sick Day patterns are available so that you can match a basal pattern name to your insulin needs on those particular days.

4. Select the basal pattern that you want to set up. An edit screen appears for the pattern you selected. The following example shows the Edit Workday screen.

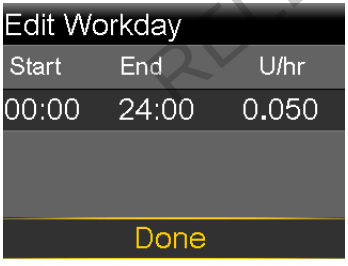


Caution: Insulin is delivered in units per hour. If you set a basal rate of 0.025 U/hr for a 30-minute time period, this might result in no insulin delivered for that 30-minute period.

5. To create one continuous 24-hour basal rate for your basal pattern, continue with this step. To create more than one basal rate for your new basal pattern, skip to step 6.

   a. Leave End time at 24:00 to set a 24-hour rate. The Start time of the first time segment is always 00:00.

   b. Set your rate in units per hour.



   c. Skip to Step 7.

6. To create more than one basal rate for your new basal pattern, enter one basal rate at a time, as described in the following steps:

   a. Set the End time and the Rate for your first basal rate. You set your rates in 30-minute increments.

      If you set the End time to anything other than 24:00, a second basal rate setting appears.

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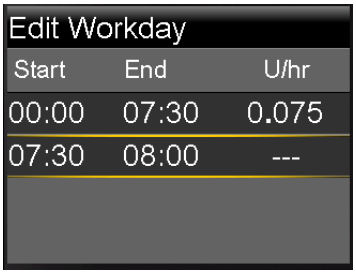

The Start time for the next rate is always the same as the End time of the previous rate.

Note: If you need to make a change, you can press ^ to scroll up to the rate you want to change. Adjust the End time or Rate values as desired.

Note that pressing ^ or v when a field is selected (flashing) adjusts the value of that field. When there is no field selected, pressing ^ or v allows you to scroll up or down the list of basal rates.

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b. Continue setting rates for different time periods as needed. The End time for your last rate must be 24:00, as shown in the example below.

7. When you finish setting your basal pattern, select **Done**. (The Done option appears only when the last End time in your basal pattern is set to 24:00).

   A screen appears that allows you to review your basal pattern. If you need to make any changes, press ↩ to return to the previous screen.

8. Select **Save**.

   To activate your basal pattern, see *Changing from one basal pattern to another, on page 46*.

Editing, copying, or deleting a basal pattern

To edit, copy, or delete a basal pattern:

1. Go to the Basal Pattern Setup screen.

   Menu > Insulin Settings > Basal Pattern Setup

   The Basal Pattern Setup screen displays all of your existing basal patterns.
2. Select the basal pattern you want to edit, copy, or delete.
3. Select **Options**.
4. Do one of the following:
   - Select **Edit** to adjust the End time or rate values for one or more of the basal rates in this basal pattern.
   - Select **Copy** to copy the basal rate information from the selected basal pattern to a new basal pattern. When the Select Name screen appears, you can select any available name from the list. Use the Edit option to adjust the new basal pattern as desired.
   - Select **Delete** to delete the selected basal pattern. You cannot delete the active basal pattern.

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Changing from one basal pattern to another

When you change to a new basal pattern, your pump delivers your basal insulin according to the basal pattern you selected.

To change to a different basal pattern:

1. Go to the Basal Patterns screen.

   Home screen > Basal > Basal Patterns

   The Basal Patterns screen shows the basal patterns you have set up. The active basal pattern is indicated with a check mark.
2. Select the basal pattern you want to start.

   The Basal screen displays the details for the selected basal pattern.
3. To start this pattern, select **Begin**.

Temporary basal rates

The Temp Basal feature and Preset Temp feature allow you to set temporary basal rates to manage blood glucose levels during short-term activities or conditions that require a basal rate different than your current one, such as an illness or a change in physical activity. You can make an immediate change to your basal insulin for a set period of time (30 minutes to 24 hours), up to your max basal rate.

About Temp Basal rates

A temp basal rate temporarily overrides all other basal programming. Your programmed basal pattern resumes after the temp basal rate delivery is completed or cancelled.

The Temp Basal feature allows you to set and start a temporary basal rate immediately. The Preset Temp feature allows you to set up a temp basal rate ahead of time for known situations. You define temp basal rates and preset temp basal rates using either a percentage of your current basal pattern, or by setting a specific rate, as described in the following table.

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This temp basal type:	Works like this:
Percent	Delivers a percentage of the basal rates programmed in your active basal pattern for the duration of the temp basal rate. The temp basal amount is rounded down to the next 0.025 units if your basal rate is set at less than 1 unit per hour, or to the next 0.05 units if your basal rate is set at more than 1 unit per hour. Temp basal rates can be set to deliver from 0 to 200% of your scheduled basal rate. The percent amount you can use, however, is based on the largest basal rate scheduled during the temp basal duration, and is limited by your max basal rate.
Rate	Delivers a fixed basal insulin rate in units per hour for the duration of your temporary basal, limited by your max basal rate.

To use the Temp Basal feature, see *Starting a Temp Basal rate, on page 48*. To use the Preset Temp Basal feature, see *Preset Temp basal rates, on page 49*.

Starting a Temp Basal rate

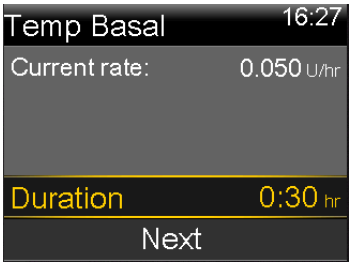
When you start a temp basal rate, your basal delivery changes to the temporary basal rate for the duration you set. When the duration is complete, your basal insulin automatically returns to the active basal pattern.

To start a temp basal rate:

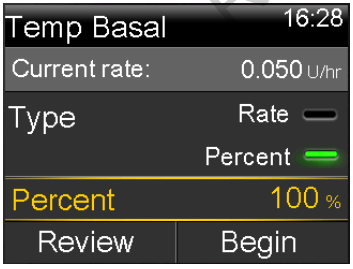
1. Go to the Temp Basal screen.

   Home screen > Basal > Temp Basal

2. **Duration** is flashing. Set the Duration for this temp basal rate. The Duration can be set from 30 minutes to 24 hours, in 15-minute increments.



3. Select **Next**.
4. The Type defaults to Percent. You can switch between Percent and Rate by selecting **Type**.



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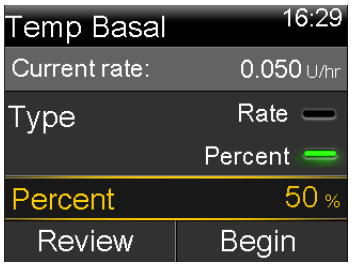
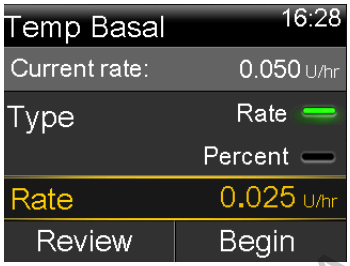
5. Depending on the Type you selected, do one of the following:

   - Enter a percentage:



   - Enter a basal rate, making sure you do not exceed your max basal rate:



6. If desired, select **Review** to review your temp basal setting.
7. Select **Begin** to start the temp basal rate.

   Your Temp Basal rate continues for the duration you set. The Basal option on the Home screen appears as Basal (T) during your temp basal delivery. Your scheduled basal rate automatically starts again when your Temp Basal rate finishes.

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> **Note:** If you need to cancel your temp basal, select **Basal (T)** from the Home screen, then select **Cancel Temp Basal**.

Preset Temp basal rates

The Preset Temp feature allows you to set up basal rates for recurring short-term situations where you need to temporarily change your basal rate.

There are four names you can use to match your preset temp basal rate to a situation: High Activity, Moderate Activity, Low Activity, and Sick. There are also four additional preset temp rates available to use for other circumstances (Temp 1 through Temp 4).

Setting up and managing Preset Temp basal rates

This section describes how to set up, edit, rename, or delete a preset temp basal rate. For information on how to start using a preset temp basal rate, see *Starting a Preset Temp basal rate, on page 51*.

To set up a preset temp basal rate:

1. Go to the Preset Temp Setup screen.

   Menu > Insulin Settings > Preset Temp Setup

2. Select **Add New**.
3. Select a name for the preset temp basal rate you want to set (Temp 1, High Activity, Moderate Activity, Low Activity, or Sick).
4. The Type defaults to Percent. You can switch between Percent and Rate by selecting **Type**.
5. If you are using Percent, enter the percentage you want to use. If you are using Rate, enter the rate in units per hour. You cannot exceed your max basal rate.
6. Set the **Duration** (from 30 minutes to 24 hours in 15 minute increments) that you want this preset temp basal to be active.
7. Select **Save**.

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To change, rename, or delete a preset temp basal rate:

1. Go to the Preset Temp Setup screen.

   Menu > Insulin Settings > Preset Temp Setup

2. Select the desired preset temp basal.

   Note: You cannot select a preset temp basal rate that is currently in use.

3. Select **Options**, and then do one of the following:

- Select **Edit** to adjust the Type (Percent or Rate), the Percentage or Rate amount, and the Duration for this preset temp basal rate.
- Select **Rename** to assign a different name to this preset temp basal rate. When the Select Name screen appears, you can select any available name from the list.
- Select **Delete** to delete this preset temp basal rate.

Starting a Preset Temp basal rate

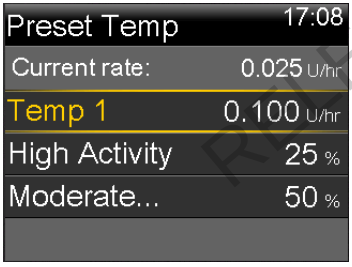
You must set up preset temp basal rates before you can use the Preset Temp feature. For more information, see *Preset Temp basal rates, on page 49*.

To start a preset temp basal rate:

1. Go to the Preset Temp screen. The Preset Temp option only appears if you have set up preset temp basal rates.

   Home screen > Basal > Preset Temp

   The Preset Temp screen displays the preset temp basal rates you have set up, along with their percentage or rate amounts.



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Note: Depending on your active basal pattern, it is possible for a percentage preset temp basal rate to exceed your max basal limit. Because you cannot use a preset temp basal rate that exceeds your max basal limit, these rates appear in the list, but are not available for use.

2. Select the preset temp basal rate that you want to use, and then select **Begin**.

Your preset temp basal rate continues for the duration you set. The Basal option on the Home screen appears as Basal (T) during your preset temp basal delivery. Your scheduled basal rate automatically starts again when your preset temp basal rate finishes.

Canceling a Temp Basal or Preset Temp basal rate

You can cancel a temp basal or preset temp basal rate at any time. When you do so, your scheduled basal pattern automatically starts again.

To cancel a temp basal rate:

1. Go to the Basal screen.

   Home screen > Basal (T)

   The Temp Basal screen displays the name (Preset Temp only), current basal rate, the set duration, and the remaining time.

2. Select **Cancel Temp Basal**.

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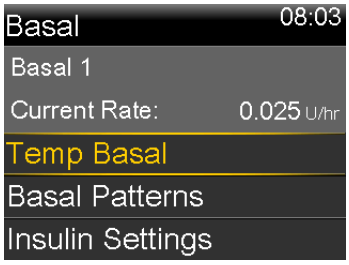
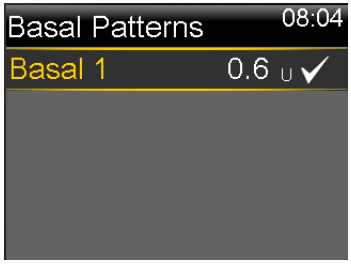
Viewing your basal information

The following table describes how you can view your basal rates and patterns.

To do this:	Do this:
View your current basal rate	Go to the Basal screen: **Home screen > Basal** The active basal pattern and current basal rate appear at the top of the Basal screen.  You can also view your current basal rate by selecting the Status Bar at the top of the Home screen, and then selecting **Quick Status**.
View your basal patterns	Go to the Basal Patterns screen: **Home screen > Basal > Basal Patterns** The Basal Patterns screen shows the basal patterns you have set up, and the 24-hour insulin total for each basal pattern. A check mark appears next to the active basal pattern.  To see the individual basal rates, select the desired basal pattern.

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Stopping and resuming your insulin delivery

Use Suspend Delivery if you need to stop all active basal and bolus insulin deliveries. When you suspend your insulin delivery, your pump beeps and vibrates every 15 minutes to remind you that insulin is not being delivered.

When you are ready to continue your basal insulin delivery, use the Resume feature. When you use the Resume feature, your pump starts your programmed basal pattern, but does not start any previously programmed bolus deliveries.

Note: If you want to stop a bolus delivery only, without stopping your basal delivery, see *Stopping a bolus delivery, on page 88*.

WARNING: A bolus delivery or fill cannula that was suspended does not restart when you resume. To avoid a high BG and ketoacidosis, always check the pump's Daily History after you resume insulin delivery to determine the amount that was delivered. If needed, program a new bolus or fill cannula delivery.

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Caution: When using Audio or Vibrate, it is possible that an Audio or Vibration notification may not occur as expected if the speaker or vibrator in your pump malfunctions. This is most important when using the Easy Bolus feature or when your pump is in Manual Suspend where a missed notification may cause an over or under delivery of insulin.

Contact the 24 Hour HelpLine or your local representative with any concerns.

To suspend all insulin delivery:

1. Go to the Suspend Delivery screen.

   Menu > Suspend Delivery

2. A confirmation message appears. To suspend your pump and stop all insulin delivery, select **Yes**.

   The Home screen indicates that your insulin is suspended. Your pump functions are limited until you resume your insulin delivery.

To resume basal insulin delivery:

1. While insulin is suspended, go to the **Home** screen.
2. Select **Resume**.

   A confirmation message appears.
3. To resume your basal insulin delivery, select **Yes**. If a Temp Basal was active when you suspended your pump, it resumes if the time is still within the duration that you set.

Note: If you still need a bolus delivery that was in progress before you suspended your delivery, check the Daily History screen for the actual bolus units delivered and the intended bolus amount. Then you can set up a new bolus amount as needed. See *Daily History, on page 121* for details about using the Daily History screen.

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bolus

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4 Bolus

A bolus is the amount of insulin taken to cover an expected rise in blood glucose, typically when you eat a meal or snack. You can also use a bolus to correct a high blood glucose reading.

About bolus deliveries

There are different types of bolus deliveries you can use, depending on your insulin needs at the time. There are also different ways you can deliver a bolus. Discuss these options with your healthcare professional to determine what is best for you.

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Bolus types

The following table provides general information about the available bolus types.

Type	How it works	When to use it
Normal	Provides a single immediate dose of insulin.	This is the typical bolus type you use to cover your food intake, or to correct a high BG meter reading. For details about using the Normal bolus feature, see *Normal bolus, on page 73*.

Type	How it works	When to use it
Square Wave™	Delivers a single bolus evenly over an extended period of time (30 minutes to 8 hours).	You might use a Square Wave bolus: • If you have delayed food digestion due to gastroparesis or meals high in fat. • When snacking over an extended period of time. • If a Normal bolus drops your blood glucose too rapidly. For details about using the Square Wave bolus feature, see *Square Wave bolus, on page 76*.
Dual Wave™	Delivers a combination of an immediate Normal bolus followed by a Square Wave bolus.	You might use a Dual Wave bolus: • When you eat meals that are both high in carbs and fat which may delay digestion. • When your meal bolus is combined with a correction bolus for an elevated blood glucose. For details about using a Dual Wave bolus, see *Dual Wave bolus, on page 79*.

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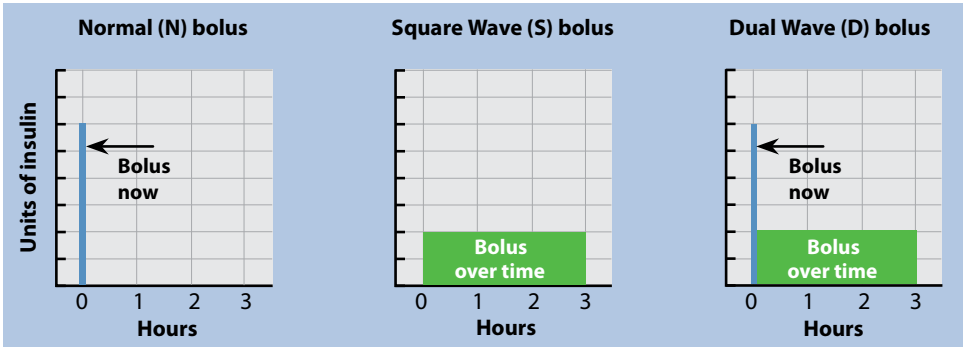
Bolus type example

The following example shows how the different bolus types work.



Bolus delivery options

The following table describes the different ways you can deliver a bolus.

Delivery method	Type of bolus available	How it works
Bolus Wizard	Normal bolus, Square Wave bolus, Dual Wave bolus	You enter your BG meter reading and your carbs you plan to eat, and then the Bolus Wizard calculates an estimated bolus amount based on your individual settings. For details about using the Bolus Wizard feature, see *Bolus Wizard, on page 65*. To deliver a: • Normal bolus using Bolus Wizard, see *page 74*. • Square Wave bolus using Bolus Wizard, see *page 77*. • Dual Wave bolus using Bolus Wizard, see *page 80*.
Manual	Normal bolus, Square Wave bolus, Dual Wave bolus	You do your own calculation and manually enter your bolus amount. To deliver a: • Normal bolus, see *page 75* • Square Wave bolus, see *page 79* • Dual Wave bolus, see *page 82*
Preset Bolus	Normal bolus, Square Wave bolus, Dual Wave bolus	You select from specific bolus settings that you define ahead of time for recurring situations. For details about using the Preset Bolus feature, see *Preset Bolus, on page 86*.

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Delivery method	Type of bolus available	How it works
Easy Bolus™	Normal bolus	After the Easy Bolus feature is set up, you can deliver a Normal bolus by using the ∧ button when the pump is in sleep mode. For details about using the Easy Bolus feature, see *Easy Bolus, on page 83*.
Remote Bolus from your compatible Bayer meter	Normal bolus or any Preset Bolus set up on your pump.	For information on using the Remote Bolus feature on your compatible Bayer meter, see the user guide that came with your compatible Bayer meter. For information on turning on the Remote Bolus feature on your pump, see *Setting up Remote Bolus, on page 112*.

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Bolus settings

The following table describes some bolus settings that may need to be changed before you use your bolus options. Consult with your healthcare professional for the settings that are right for you.

Note: There are additional settings required if you want to use the Bolus Wizard. These are described in the section, *Bolus Wizard, on page 65*.

Setting	What it is	What it does for you
Max Bolus	Maximum amount of bolus insulin (in units) your pump can deliver in a single bolus.	Provides a safety measure by limiting the total amount of bolus insulin you can program for a single bolus delivery. For details about setting the max bolus amount, see *Max Bolus, on page 63*.

Setting	What it is	What it does for you
Bolus Increment	The amount of insulin (in units) that is increased or decreased with each button press when adjusting your bolus amount. The Bolus Wizard will also use the increment to display the bolus total and adjustment amounts. This setting does not apply to Easy Bolus.	Allows you to set your increment value according to your typical bolus amounts. For details about setting the bolus increment, see *Bolus Increment, on page 64*.
Bolus Speed	The speed that your pump delivers your bolus insulin.	Allows you to set your bolus insulin delivery speed to Standard or Quick. For details about setting your bolus speed, see *Bolus Speed, on page 64*.

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Max Bolus

Max Bolus limits the amount of insulin that can be delivered in a single bolus. Your pump prevents single bolus insulin deliveries that exceed the max bolus you set. You can set your max bolus from 0 to 75 units. Set your max bolus as prescribed by your healthcare professional.

If you are setting your max bolus after you have set up your Preset Bolus deliveries, you cannot set your max bolus lower than any of your Preset Bolus amounts.

To set your max bolus:

1. Go to the Max Basal/Bolus screen.

   Menu > Insulin Settings > Max Basal/Bolus

2. Select **Max Bolus**.
3. Because the Max Bolus setting determines your bolus insulin limit, a warning message appears any time you go to the screen to change the value. To continue to the Max Bolus screen, select **Continue**.

4. Select **Max Bolus**, and then set the maximum number of insulin units your pump can deliver in one bolus.
5. Select **Save**.

Bolus Increment

The Bolus Increment setting determines the number of units that are increased or decreased with each button press when you adjust your bolus delivery amount in the Bolus Wizard, Manual Bolus, and Preset Bolus screens. Depending on your typical bolus amount, you can set your increment to 0.1 units, 0.05 units, or 0.025 units.

Note: Easy Bolus uses a setting called Step Size to determine the number of insulin units for each button press. See *Setting up Easy Bolus, on page 84* for more information.

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To set your Bolus Increment:

1. Go to the Bolus Increment screen.

   Menu > Insulin Settings > Bolus Increment
2. Select **Increment** to set your desired increment value.
3. Select **Save**.

Bolus Speed

Bolus Speed sets the rate at which your pump delivers bolus insulin. You can set a Standard rate (1.5 units per minute), or a Quick rate (15 units per minute).

To set your Bolus Speed:

1. Go to the Bolus Speed screen.

   Menu > Insulin Settings > Bolus Speed
2. Select **Standard** or **Quick**.
3. Select **Save**.

Bolus Wizard

The Bolus Wizard is a feature that uses your individual Bolus Wizard settings to calculate an estimated bolus amount based on the BG values and carbs that you enter. Work with your healthcare professional to define your personal settings, which include your carb or exchange ratio, insulin sensitivity, BG target range, and active insulin time.

Note: If you do not know how to count carbs, consult with your healthcare professional before using the Bolus Wizard.

After you set up the Bolus Wizard, you can use it to calculate and deliver a food bolus, a correction bolus, or a food plus correction bolus using a Normal bolus (see *page 74*), Square Wave bolus (see *page 77*), or Dual Wave bolus (see *page 80*).

Always remember these two things when you are using the Bolus Wizard:

- Never give a bolus that was calculated more than 12 minutes ago. That bolus amount was based on a BG value that is no longer current. Instead, take a new BG meter test and have the Bolus Wizard re-calculate the necessary bolus amount.
- When using the Bolus Wizard, promptly respond to any message displayed on the pump screen. Your prompt response is needed to complete the task.

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The following sections describe how to set up the Bolus Wizard. Bolus delivery instructions are provided in the individual sections for each bolus type.

Understanding your Bolus Wizard settings

Your pump guides you through entering the following settings when you first turn on the Bolus Wizard feature. Get your prescribed settings from your healthcare professional, and always consult your healthcare professional before changing your settings. The setup procedure begins on *page 66*.

Setting	What it does
Carb Ratio Exchange Ratio	Used for food bolus calculations. • *If you count carbs:* the number of carb grams that are covered by 1 unit of insulin. • *If you count exchanges:* the number of insulin units that are needed to cover 1 carb exchange.
Insulin Sensitivity Factor	Used to calculate correction bolus amounts. Your insulin sensitivity factor is the amount that blood glucose is reduced by one unit of insulin.
BG Target	The Bolus Wizard calculates your estimated bolus based on your BG target range. The high and low values you set are the values to which your blood glucose is corrected. To use a single target value rather than a range, set the same value for High and Low. If your BG value is above the high target value, a correction dose is calculated. If your BG value is below the low target value, a negative correction is calculated and subtracted from your food bolus.
Active Insulin Time	Active insulin is the bolus insulin that has been delivered by the pump and is still working to lower your blood glucose levels. Active insulin time is the length of time that bolus insulin is tracked as active insulin. Work with your healthcare professional to get the active insulin time that best represents the insulin type you use and your physiological insulin absorption rate. For more information about how the Bolus Wizard uses your active insulin amount, see *About active insulin, on page 72*.

RELEASED

Setting up the Bolus Wizard feature

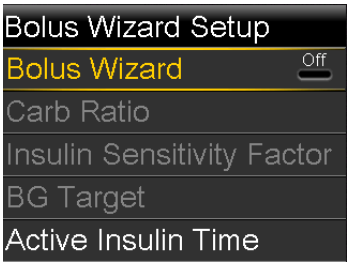
Before you can use the Bolus Wizard to calculate a bolus, you must turn on this feature and enter your Bolus Wizard settings.

To set up the Bolus Wizard feature:

1. Go to the Bolus Wizard Setup screen.

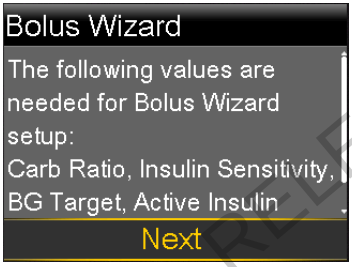
   Menu > Insulin Settings > Bolus Wizard Setup

   The Bolus Wizard Setup screen appears with the Bolus Wizard turned off.



2. Select **Bolus Wizard** to turn on the feature.

   If this is the first time you have turned on the Bolus Wizard feature, your pump displays information about the settings you need to enter.


Bolus Wizard
The following values are needed for Bolus Wizard setup:
Carb Ratio, Insulin Sensitivity, BG Target, Active Insulin
Next

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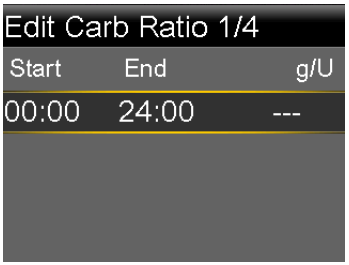
   Make sure you have the values you need, and then select **Next** to continue.

> **Note:** As you enter your personal settings, your pump displays information about each setting. Click **Next** to continue when you have read each explanation.

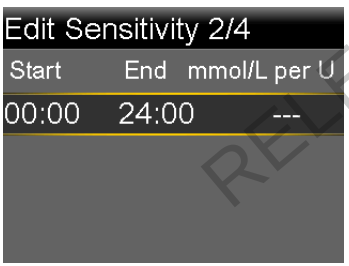
3. When the Edit Carb Ratio screen appears, enter your carb ratio. If you are setting a carb ratio, set the grams per unit (g/U). If you are setting an exchange ratio, set the units per exchange (U/exch). You can set up to eight carb ratios using different time segments. The time segments must cover a 24-hour period.



Note: Your pump uses grams as the default carb unit. If you would like to change your carb unit to exchanges, see *Carb Unit, on page 140*.

If your ratio value is outside the range of 5 to 50 grams per unit or 0.3 to 3 units per exchange, a message appears asking you to confirm your setting.

4. When the Edit Sensitivity screen appears, enter your insulin sensitivity factor. You can set up to eight different sensitivity factors using different time segments. The time segments must cover a 24-hour period.



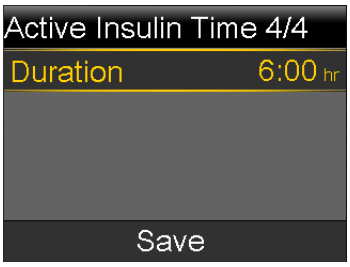
RELEASED

If the value you enter is outside the range of 1.1 to 5.6 mmol/L, a message appears asking you to confirm your setting.

5. When the Edit BG Target screen appears, enter your Bolus Wizard BG target range. You can set up to eight different BG target ranges using different time segments. The time segments must cover a 24-hour period.

If your BG target is outside the range of 5.0 to 7.8 mmol/L, a message appears asking you to confirm your setting.

6. When the Active Insulin Time screen appears, enter your active insulin time value.



7. Select **Save**.

   A message appears letting you know the Bolus Wizard setup is complete.

   You can now use the Bolus Wizard to calculate a bolus.

RELEASED

Changing your Bolus Wizard settings

This section shows you how to make changes to your personal settings after you initially set up the Bolus Wizard. These settings are available only if the Bolus Wizard is turned on.

Changing your carb or exchange ratio

You can change either your carb ratio or exchange ratio setting, depending on whether you use grams or exchanges as your carb unit. The carb ratio and exchange ratio settings are available only if the Bolus Wizard is turned on.

Note: Your pump uses grams as the default carb unit. If you would like to change your carb unit to exchanges, see *Carb Unit, on page 140*.

To change your carb or exchange ratio:

1. Go to the Carb Ratio screen or the Exchange Ratio screen, depending on the carb units you use.

   Menu > Insulin Settings > Bolus Wizard Setup > Carb Ratio

   or

   Menu > Insulin Settings > Bolus Wizard Setup > Exchange Ratio

2. Select **Edit**.
3. Select the carb or exchange ratio to adjust the Start time, the End time, and the ratio. You can set up to eight different carb or exchange ratios using different time segments. The time segments must cover a 24-hour period.

   If you set a value outside the typical range of 5 to 50 grams per unit or 0.3 to 3 units per exchange, a message appears asking you to confirm your setting.
4. When you have made your changes, select **Save**.

Changing your insulin sensitivity factor

The Insulin Sensitivity Factor option is only available if the Bolus Wizard feature is turned on.

RELEASED

To change your insulin sensitivity factor:

1. Go to the Sensitivity screen.

   Menu > Insulin Settings > Bolus Wizard Setup > Insulin Sensitivity Factor
2. Select **Edit**.
3. Select the sensitivity factor to adjust the Start time, the End time, and the Sensitivity amount. You can set up to eight different sensitivity amounts using different time segments. The time segments must cover a 24-hour period.

   If you set a value that is outside the typical range of 1.1 to 5.6 mmol/L per unit, a message appears asking you to confirm your setting.
4. When you have made your changes, select **Save**.

Changing your Bolus Wizard BG target

Your target range can be from 3.3 to 13.9 mmol/L. The Bolus Wizard BG Target option is only available if the Bolus Wizard feature is turned on.

To change your Bolus Wizard BG target range:

1. Go to the BG Target screen.

   Menu > Insulin Settings > Bolus Wizard Setup > BG Target

2. Select **Edit**.

3. Select the BG target to adjust the Start time, the End time, and the Lo (low) and Hi (high) BG Target values. Your high value cannot be less than your low value. You can set up to eight different values using different time segments. The time segments must cover a 24-hour period.

   If your BG target is outside the typical range of 5.0 to 7.8 mmol/L, a message appears asking you to confirm your setting.

4. When you have made your changes, select **Save**.

Changing your Active Insulin Time

The active insulin time setting lets the pump know which active insulin time to use in calculating the amount of active insulin to subtract before estimating a bolus. Your healthcare professional will prescribe the active insulin time that is best for you.

RELEASED

To change your active insulin time:

1. Go to the Active Insulin Time screen.

   Menu > Insulin Settings > Bolus Wizard Setup > Active Insulin Time

2. Select **Duration**, then adjust your active insulin time (in hours), using 15-minute increments.

3. Select **Save**.

Turning off the Bolus Wizard feature

You can turn off the Bolus Wizard feature at any time. Your Bolus Wizard settings remain in your pump. When the Bolus Wizard is turned off, the Bolus Wizard option does not appear in the Bolus Menu, and you cannot edit your Carb Ratio, Insulin Sensitivity Factor, or BG Target settings from the Bolus Wizard Setup screen.

To turn off the Bolus Wizard feature:

1. Go to the Bolus Wizard Setup screen.

   Menu > Insulin Settings > Bolus Wizard Setup

2. Select **Bolus Wizard** to turn the feature off.

About active insulin

Active insulin is the bolus insulin that has already been delivered to your body, and is still working to lower your blood glucose levels. The pump considers your active insulin time setting in determining if any active insulin is still in your body from prior boluses. This may help prevent hypoglycemia caused by over-correcting for high blood glucose.

Your current active insulin amount displays on the Home screen, and includes only the bolus insulin you have already received.

When you are using the Bolus Wizard, the Bolus Wizard calculator uses your current active insulin value to determine if there is an active insulin adjustment needed. The active insulin adjustment calculation considers both the bolus insulin that has already been delivered (the amount shown on the Home screen), as well as any insulin that is going to be delivered by an active Square Wave bolus.

RELEASED

WARNING: Do not use the Bolus Wizard to calculate a bolus for a period of time after giving a manual injection of insulin by syringe or pen. Manual injections are not accounted for in the active insulin amount. Therefore, the Bolus Wizard could prompt you to deliver more insulin than needed. Too much insulin may cause hypoglycemia. Consult with your healthcare professional for how long you need to wait after a manual injection of insulin before you can rely on the active insulin calculation of your Bolus Wizard.

Bolus Wizard warnings

When you use the Bolus Wizard, there may be times when you see one of the following:

Warning:	What it means:	What to do:
High BG	Your BG meter reading is above 13.9 mmol/L.	• Check for an occlusion. • Check ketones. • Consider an insulin injection. • Monitor your BG.

Warning:	What it means:	What to do:
Low BG	Your BG meter reading is below 3.9 mmol/L.	Treat your low BG. Do not give yourself a bolus until your BG returns to normal.
Max Bolus Exceeded	The bolus amount entered exceeds your Max Bolus setting.	Check the bolus amount. Select **No** to cancel, or **Yes** to continue. If you select Yes, the bolus amount that you entered is reduced to your max bolus limit. Let your healthcare professional know if you routinely receive the Max Bolus exceeded warning so that they can adjust your pump settings.

Note: In the event that you do not clear the High BG, Low BG, or Max Bolus exceeded warning, the warning will remain on your pump indefinitely. If you clear the message after more than 12 minutes have passed, do not deliver the bolus amount shown. That bolus amount was based on a BG value that is no longer current. Instead, return to the Home screen and check your BG again with your meter. Enter the new value into the Bolus Wizard and give a bolus if needed.

RELEASED

Normal bolus

A Normal bolus provides a single immediate dose of insulin. You use a Normal bolus to cover your food intake or to correct a high BG meter reading.

You cannot access the Reservoir & Tubing, Insulin Settings, or Sensor Settings menu options during a Normal bolus delivery.

Note: Your pump allows you to deliver a Normal bolus while a Square Wave bolus or the Square portion of a Dual Wave bolus is being delivered.

Delivering a Normal bolus with the Bolus Wizard

To deliver a Normal bolus using the Bolus Wizard:

1. For a correction bolus or a food bolus with a correction, use your BG meter to check your blood glucose. For a food bolus only, skip this step.
2. Go to the Bolus Wizard screen.

   Home screen > Bolus > Bolus Wizard

   The Bolus Wizard screen shows your current BG meter reading (if applicable) and any insulin that is still active from previous boluses. For more information about active insulin, see *About active insulin, on page 72*. For more information, see *About your compatible Bayer meter, on page 111*.

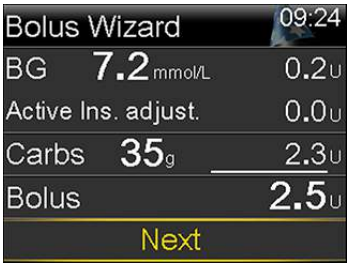
   Note: Be aware that if you already have the Bolus Wizard open prior to wirelessly sending your BG meter reading to your pump, you must close the Bolus Wizard and open it again, in order for that reading to appear.

RELEASED

3. If you are not using a wirelessly connected compatible Bayer meter, you can select **BG** to manually enter your BG meter reading.

   Note: If you choose not to enter a BG value, three dashes appear on the screen in place of the BG value.

4. For a food bolus, select **Carbs** to enter the carb count of your meal. For a correction bolus where no food was eaten, leave the Carbs value at 0.
5. Your calculated bolus appears in the Bolus field.



If you want to change the bolus amount, select **Bolus** and make any desired adjustment. If you change your bolus amount, the word "Modified" appears next to the new bolus amount.

6. Select **Next** to review your bolus information.

   Your bolus amount appears.

> **Note:** If you modified your bolus amount in the previous step, **Bolus Calculated** displays your original bolus amount, **Modification** displays the amount you added or subtracted from your bolus, and **Bolus** displays the actual bolus amount.

RELEASED

7. Select **Deliver Bolus** to start your bolus.

   Your pump beeps or vibrates and displays a message when your bolus starts. The Home screen shows your bolus amount as it is being delivered. Your pump beeps or vibrates when your bolus is complete.

Delivering a Normal bolus using Manual Bolus

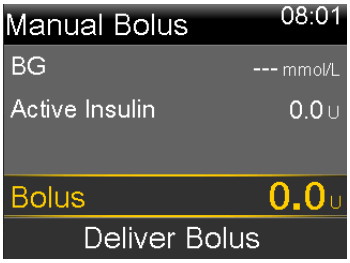
The following section describes how to deliver a Normal bolus using the Manual Bolus feature.

To deliver a Normal bolus using Manual Bolus:

1. Go to the Manual Bolus screen.

   Home screen > Bolus > Manual Bolus

   Note: If the Bolus Wizard is turned off, the Manual Bolus screen appears when you select Bolus.



   The Manual Bolus screen shows your current BG value (if applicable) and any insulin that is still active from previous boluses. For more information about active insulin, see *About active insulin, on page 72*.

2. Select **Bolus** to set your bolus delivery amount (in units).
3. Select **Deliver Bolus** to start your bolus.

   Your pump beeps or vibrates and displays a message when your bolus starts. The Home screen shows your bolus amount as it is being delivered. Your pump beeps or vibrates when your bolus is complete.

RELEASED

Square Wave bolus

A Square Wave bolus delivers a bolus evenly over a period of time (30 minutes to 8 hours).

When using the Bolus Wizard, a Square Wave bolus is available only when giving a food bolus without a correction for an elevated BG. A Square Wave bolus is not available for a correction bolus alone, or a correction bolus with food bolus.

A Square Wave bolus can be useful in these situations:

- If you have delayed food digestion due to gastroparesis or meals high in fat.
- When you are snacking over an extended period of time.
- If a Normal bolus drops your blood glucose too rapidly.

Since the Square Wave bolus extends delivery over a period of time, the insulin is more likely to be available as you need it.

Note: You cannot perform these functions during a Square Wave bolus delivery:

- Change the Max Bolus or the Active Insulin Time settings.
- Turn off or deliver Dual Wave or Square Wave boluses.
- Turn the Bolus Wizard feature on or off.
- Fill the cannula.
- Rewind your pump.
- Run a self-test.
- Access the Manage Settings menu.

All other functions are available during the Square Wave bolus.

RELEASED

Turning on or off Square Wave bolus

The Square Wave bolus delivery option is available only after you turn on the Square Wave feature.

To turn on or turn off the Square Wave feature:

1. Go to the Dual/Square screen.

   Menu > Insulin Settings > Dual/Square Wave

2. Select **Square Wave** to turn the feature on or off.
3. Select **Save**.

Delivering a Square Wave bolus with the Bolus Wizard

The Square Wave option is available in the Bolus Wizard only after you turn on the Square Wave feature. Also, you must have entered a Carbs value.

To deliver a Square Wave bolus with the Bolus Wizard:

1. Go to the Bolus Wizard screen.

   Home screen > Bolus > Bolus Wizard

The Bolus Wizard screen shows your current BG meter reading (if applicable) and any insulin that is still active from previous boluses. For more information about active insulin, see *About active insulin, on page 72*. For more information, see *About your compatible Bayer meter, on page 111*.

> **Note:** Be aware that if you already have the Bolus Wizard open prior to wirelessly sending your BG meter reading to your pump, you must close the Bolus Wizard and open it again, in order for that reading to appear.

2. If you are not using a wirelessly connected compatible Bayer meter, you can select **BG** to manually enter your BG meter reading.

> **Note:** If you choose not to enter a BG meter reading, three dashes appear on the screen instead.

3. Select **Carbs** to enter the amount of carbs in your food.
4. Review your calculated bolus amount in the Bolus field. If you want to change the bolus amount, select **Bolus** and make your desired change. Remember, if there is a correction bolus amount calculated, you are not able to give a Square Wave bolus.

RELEASED

> **Note:** If you change your bolus amount, the word "Modified" appears next to the new bolus amount.

5. Select **Next** to review your bolus information.
6. Select **Square**.

   The Bolus Wizard screen appears with your bolus amounts.
7. To change the time period over which your bolus is delivered, select **Duration** to adjust the time. The duration can be from 30 minutes to 8 hours, in 15 minute increments.
8. Select **Deliver Bolus** to start your bolus.

During a Square Wave bolus delivery, the **Bolus** button on your Home screen appears as Bolus (S). You can select **Bolus (S)** to stop the bolus, to see details on the insulin that has been delivered, or to access the Bolus menu. The Bolus menu provides access to the Bolus Wizard, Manual Bolus, Preset Bolus, and Insulin Settings options.

Delivering a Square Wave bolus using Manual Bolus

The Square Wave option is available in the Manual Bolus screen only after you turn on the Square Wave feature.

To deliver a Square Wave bolus manually:

1. Go to the Manual Bolus screen.

   Home screen > Bolus > Manual Bolus

2. Set your bolus delivery amount (in units), and then select **Next**.
3. Select **Square**.
4. Select **Duration** and set the amount of time over which you want your Square Wave bolus to be delivered. The duration can be from 30 minutes to 8 hours, and is set in 15-minute increments.
5. Select **Deliver Bolus** to start your bolus.

   During a Square Wave delivery, the **Bolus** button on your Home screen appears as Bolus (S). You can select **Bolus (S)** to stop the bolus, to see details on the insulin that has been delivered, or to access the Bolus menu. The Bolus menu provides access to the Bolus Wizard, Manual Bolus, Preset Bolus, and Insulin Settings options.

RELEASED

Dual Wave bolus

The Dual Wave bolus feature meets both immediate and extended insulin needs by delivering a combination of an immediate Normal bolus followed by a Square Wave bolus.

A Dual Wave bolus can be useful in these situations:

- When you need to correct elevated blood glucose before a meal, and you also need a delayed bolus for food that is absorbed slowly.

- When you eat meals with mixed nutrients, such as carbs, fats and proteins, that are absorbed at different rates.

Turning on or off Dual Wave bolus

The Dual Wave bolus delivery option is available only after you turn on the Dual Wave feature.

To turn on or turn off the Dual Wave feature:

1. Go to the Dual/Square screen.

   Menu > Insulin Settings > Dual/Square Wave

2. Select **Dual Wave** to turn the feature on or off.
3. Select **Save**.

Delivering a Dual Wave bolus with the Bolus Wizard

The Dual Wave option is available in the Bolus Wizard only after you turn on the Dual Wave feature.

RELEASED

To deliver a Dual Wave bolus with the Bolus Wizard:

1. For a correction bolus or a food bolus with a correction, use your BG meter to check your blood glucose. For a food bolus only, skip this step.
2. Go to the Bolus Wizard screen.

   Home screen > Bolus > Bolus Wizard

   The Bolus Wizard screen shows your current BG meter reading (if applicable) and any insulin that is still active from previous boluses. For more information about active insulin, see *About active insulin, on page 72*. For more information, see *About your compatible Bayer meter, on page 111*.

   Note: Be aware that if you already have the Bolus Wizard open prior to wirelessly sending your BG meter reading to your pump, you must close the Bolus Wizard and open it again, in order for that reading to appear.

3. If you are not using a wirelessly connected compatible Bayer meter, you can select **BG** to manually enter your BG meter reading.

Note: If you choose not to enter a BG value, three dashes appear on the screen in place of the BG value.

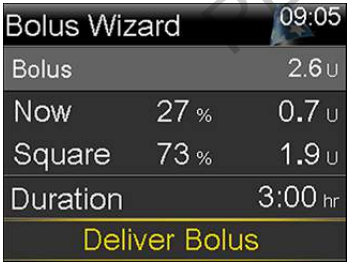
4. For a food bolus, select **Carbs** to enter the carb count of your meal. For a correction bolus where no food was eaten, leave the Carbs value as 0.
5. Review your calculated Bolus amount. If you want to change the amount, select **Bolus** and make your desired change.

Note: If you change your bolus amount, the word "Modified" appears next to the new bolus amount.

6. Select **Next** to review your bolus information.
7. Select **Dual**.

   The Bolus Wizard screen appears, with the food amount split evenly between the Now and Square portions.
8. If you need to change the amounts, select the area of the screen with the Now value and adjust the **Now** amount.

   When you adjust the Now amount, the Square amount adjusts automatically.



9. Adjust the **Duration** over which you want the Square Wave portion to be delivered. The duration can be from 30 minutes to 8 hours.
10. Select **Deliver Bolus** to start your bolus.

    During a Dual Wave delivery, the Home screen shows the progress of the Now portion of your delivery. When the Now portion is complete, the **Bolus** button on your Home screen appears as Bolus (D). You can select **Bolus (D)**

RELEASED

to stop the bolus, to see details on the amount of bolus insulin delivered, or to access the Bolus menu. The Bolus menu provides access to the Bolus Wizard, Manual Bolus, Preset Bolus, and Insulin Settings options.

Delivering a Dual Wave Bolus using Manual Bolus

The Dual Wave option is available in the Manual Bolus screen only after you turn on the Dual Wave feature.

To deliver a Dual Wave bolus using Manual Bolus:

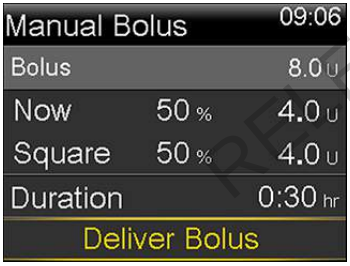
1. Go to the Manual Bolus screen.

   Home screen > Bolus > Manual Bolus

   The Manual Bolus screen appears.

2. Set your bolus delivery amount (in units), and then select **Next**.
3. Select **Dual**.

   The Manual Bolus screen appears, with the Now and Square portions split evenly.



RELEASED

4. If you need to change the amounts, select the area of the screen with the Now value and adjust the **Now** amount. When you adjust the Now amount, the Square amount adjusts automatically.
5. Adjust the **Duration** over which you want the Square Wave portion to be delivered. The duration can be from 30 minutes to 8 hours.
6. Select **Deliver Bolus** to start your bolus.

   During a Dual Wave delivery, the Home screen shows the progress of the Now portion of your delivery. When the Now portion is complete, the **Bolus** button on your Home screen appears as Bolus (D). You can select **Bolus (D)**

to stop the bolus, to see details on the amount of bolus insulin delivered, or to access the Bolus menu. The Bolus menu provides access to the Bolus Wizard, Manual Bolus, Preset Bolus, and Insulin Settings options.

Easy Bolus

The Easy Bolus feature allows you to quickly deliver a Normal bolus using only the ∧ button. Your pump must be in sleep mode to use the Easy Bolus feature.

Before using Easy Bolus, you must turn on the feature and set the step size. The step size determines the number of units the bolus amount increases each time you press the ∧ button. Your Easy Bolus delivery is limited to 20 steps or your max bolus limit, whichever comes first.

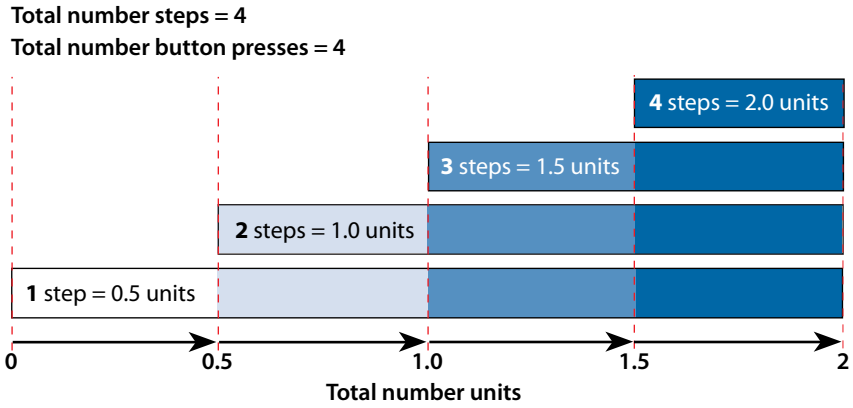
To help you count your Easy Bolus steps, each time you press the ∧ button, your pump makes a different tone. There are five different tones that repeat if you use more than five steps.

Understanding Easy Bolus step sizes

RELEASED

When setting up Easy Bolus, you can set the step size from 0.1 to 2.0 units. Your step size cannot be higher than your max bolus. Set the step size to a number that is convenient to use and easy to multiply.

The following example shows how your bolus amount is increased with each step, or each press of the ∧ button when using the Easy Bolus feature to deliver a bolus. In this example, the step size is 0.5 units. For a delivery of 2.0 units, you would need four steps, or press the ∧ button four times when using the Easy Bolus feature.



Setting up Easy Bolus

The Easy Bolus option is available only after you turn on the feature.

To set up Easy Bolus:

1. Go to the Easy Bolus screen.

   Menu > Insulin Settings > Easy Bolus
2. Select **Easy Bolus** to turn on the feature.
3. Set the **Step Size** amount (in units). You can set the step size from 0.1 to 2.0 units. Your step size cannot be higher than your max bolus.
4. Select **Save**.

RELEASED

Delivering a bolus using Easy Bolus

Initially you should use the Easy Bolus feature while looking at the pump screen as you count the tones or vibrations.

Caution: Always check your pump if you hear any unanticipated beeps or vibrations.

Caution: When using Audio or Vibrate, it is possible that an Audio or Vibration notification may not occur as expected if the speaker or vibrator in your pump malfunctions. This is most important when using the Easy Bolus feature or when your pump is in Manual Suspend where a missed notification may cause an over or under delivery of insulin.

Contact the 24 Hour HelpLine or your local representative with any concerns.

To use the Easy Bolus feature, you need to put your pump into sleep mode by pressing and holding the **Menu** button for about two seconds.

To deliver a bolus using Easy Bolus:

1. While your pump screen is in sleep mode, press and hold ∧ for about one second. After your pump beeps or vibrates, release ∧. You can now start programming your Easy Bolus.

   Note: If your pump does not respond when you press ∧, it may not be in sleep mode, even if the screen is dark.

2. Press ∧ the number of times needed to set your bolus amount.

   Each time you press ∧, your pump sounds a tone or vibrates, and your bolus amount increases by the number of units set for the step size.

   Note: You cannot use ∨ to select the Easy Bolus values. Pressing ∨ cancels the Easy Bolus.

3. When you have reached the desired bolus amount, press and hold ∧ to confirm the amount. You should hear a confirmation tone or feel a vibration for each button press. Count to ensure the amount is correct. If the amount is not correct, press and hold ∨ until you hear a tone, and then start again from step 1.

RELEASED

4. When the bolus amount is confirmed, press and hold ^ for about one second to deliver your bolus. Your pump beeps or vibrates. Your bolus starts immediately after the confirmation.

> **Note:** If you do not start your bolus within 10 seconds, your Easy Bolus is cancelled, and you receive a message letting you know that your bolus was not delivered.

Preset Bolus

The Preset Bolus feature allows you to set up in advance bolus deliveries you expect to use frequently. There are four Preset Bolus names that allow you to match a bolus to a meal with a known carb content: Breakfast, Lunch, Dinner and Snack. There are four additional Preset Bolus names that can be set for other circumstances (Bolus 1 through Bolus 4).

> **Note:** To set up a Dual Wave bolus or Square Wave bolus, the Dual Wave or Square Wave feature must be turned on.

RELEASED

Setting up and managing Preset Bolus deliveries

To set up Preset Bolus amounts:

1. Go to the Preset Bolus Setup screen.

   Menu > Insulin Settings > Preset Bolus Setup

   The Preset Bolus Setup screen appears, showing any existing Preset Bolus settings.

2. Select **Add New**.

   The Select Name screen appears with the available Preset Bolus names.

3. Select the Preset Bolus you want to set.

   The Edit screen for that particular Preset Bolus appears.

4. Select **Bolus** to set the bolus amount.

5. Select **Type** to set this as a Normal bolus, Square Wave bolus, or Dual Wave bolus.

Note: The **Type** field appears only when you have the Dual Wave bolus or Square Wave bolus features turned on.

If you set the type to Square Wave or Dual Wave, additional settings appear.

6. If you are setting up a Square Wave bolus or Dual Wave bolus, do the following:
   - For a Square Wave bolus, set the **Duration** of time for the bolus delivery.
   - For a Dual Wave bolus, adjust the **Now/Square** percentages as needed, then set the **Duration** of time for the Square Wave portion of the bolus.

Note: If you later turn off the Dual Wave or Square Wave feature, your existing Preset Bolus settings are still available for use.

7. Select **Save**.

Changing, renaming, or deleting a Preset Bolus

You cannot delete, rename, or edit a Preset Bolus while it is delivering.

Note: You cannot edit a Dual Wave or Square Wave Preset Bolus when the Dual Wave or Square Wave features are turned off. You can, however, rename or delete a Dual Wave or Square Wave Preset Bolus when the features are turned off.

RELEASED

To change, rename, or delete a Preset Bolus:

1. Go to the Preset Bolus Setup screen.

   Menu > Insulin Settings > Preset Bolus Setup

   The Preset Bolus Setup screen appears, showing any existing Preset Bolus settings.
2. Select the desired Preset Bolus.
3. Select **Options**.
4. Do one of the following:

- Select **Edit** to adjust the Bolus value and Type, if applicable. If you change to a Square Wave bolus, you need to enter the Duration. If you change to a Dual Wave bolus, you need to enter the Now and Square amounts, and the Duration.
- Select **Rename** to assign a different name to this Preset Bolus. When the Select Name screen appears, you can select any available name from the list.
- Select **Delete** to delete this Preset Bolus.

Delivering a Preset Bolus

Follow these steps to deliver a Preset Bolus. You must set up Preset Bolus deliveries before you can use the Preset Bolus feature. For more information, see *Setting up and managing Preset Bolus deliveries, on page 86*.

To deliver a Preset Bolus:

1. Go to the Home screen.
2. Select **Bolus**.

   The Bolus screen appears.
3. Select **Preset Bolus**.

   The existing preset bolus settings appear, showing your current BG value (if applicable) and any insulin that is still active from previous boluses. For more information about active insulin, see *About active insulin, on page 72*.
4. Select the Preset Bolus you want to deliver.
5. Verify your bolus amounts, and then select **Deliver Bolus**.

   Your pump beeps or vibrates and displays a message when your bolus starts.

RELEASED

Stopping a bolus delivery

The following procedures describe how to stop a Normal bolus or a Dual Wave bolus during the Now portion delivery, and how to stop a Square Wave bolus or a Dual Wave bolus during the Square portion delivery.

Note: This procedure describes how to stop a bolus that is in progress. It does not stop your basal insulin delivery. If you need to stop all insulin delivery, use the Suspend Delivery feature (Menu > Suspend Delivery).

To stop a Normal bolus delivery or the Now portion of a Dual Wave bolus delivery:

1. While your pump is delivering your Normal bolus or the Now portion of a Dual Wave bolus, select **Stop Bolus** from the Home screen.

2. To stop your bolus, select **Yes** to confirm.

Note: If you are delivering a Normal bolus and a Square Wave bolus at the same time, or a Normal bolus and the Square portion of a Dual Wave bolus at the same time, both boluses are stopped.

The Bolus Stopped screen appears and shows the amount of bolus delivered, and the original bolus amount you set up.

To stop a Square Wave bolus delivery or the Square portion of a Dual Wave bolus delivery:

1. Select **Bolus (S)** or **Bolus (D)** from the Home screen.
2. Select **Stop Bolus**.
3. To stop your bolus, select **Yes** to confirm.

Note: If you are delivering a Normal bolus and a Square Wave bolus at the same time, or a Normal bolus and the Square portion of a Dual Wave bolus at the same time, both boluses are stopped.

RELEASED

The Bolus Stopped screen appears and shows the amount of bolus delivered, and the original bolus amount you set up.

RELEASED

5

reservoir and infusion set

RELEASED

RELEASED

5 Reservoir and infusion set

Setting up the reservoir and infusion set

When you are ready to use your pump with insulin, make sure the time and date are correct on your pump. For details on changing the time and date on your pump, see *Time and date, on page 148*. You must also program your settings as instructed by your healthcare professional.

RELEASED

You will need these items:

- MiniMed 640G insulin pump
- Vial of insulin (U100)
- MiniMed reservoir
- MiniMed-compatible infusion set and its user guide

WARNING: If this is the first time you are using your pump with insulin, and you have practiced giving boluses on your pump, you need to clear the active insulin value before starting on insulin. For details, see *Clearing your active insulin, on page 144*.

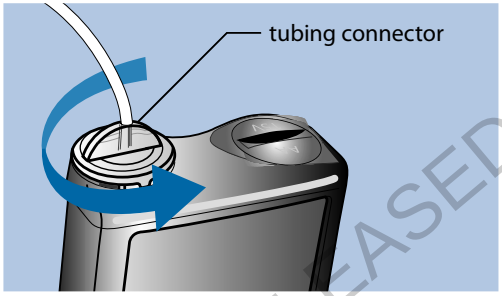
Removing the reservoir

If this is the first time you are inserting a reservoir into your pump and you do not currently have a reservoir loaded, skip to *Rewinding your pump, on page 94*.

WARNING: Make sure the infusion set is disconnected from your body before you remove the reservoir from your pump.

To remove your reservoir:

1. Wash your hands.
2. Remove the entire infusion set from your body.
3. If you have the optional activity guard attached to the reservoir compartment on your pump, remove it now.
4. Turn the tubing connector a half-turn counter-clockwise, then pull the reservoir and connector out from the pump.



RELEASED

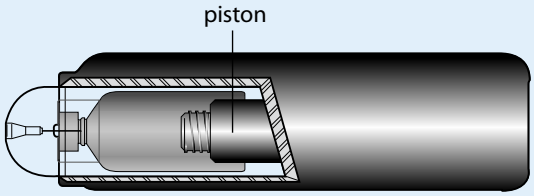
5. Dispose of the used reservoir and infusion set according to local regulations.

Rewinding your pump

WARNING: Make sure the infusion set is disconnected from your body before you rewind your pump or fill the infusion set tubing. Never insert the reservoir into the pump while the tubing is connected to your body. Doing so could result in an accidental infusion of insulin, which may cause low BG.

When you rewind your pump, the piston in the reservoir compartment returns to its starting position and allows a new reservoir to be placed into the pump.

Note: The piston is located in the reservoir compartment of your pump. It engages the reservoir and pushes insulin through the tubing.



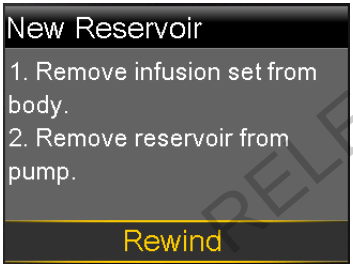
To rewind your pump:

1. Go to the New Reservoir screen.

   Menu > Reservoir & Tubing > New Reservoir

   The New Reservoir screen appears.

   If you have not yet removed the infusion set and reservoir, do so now.



2. Select **Rewind**.

   The piston in the reservoir compartment of your pump returns to its starting position. This may take several seconds. During this process, a "Rewinding" message appears.

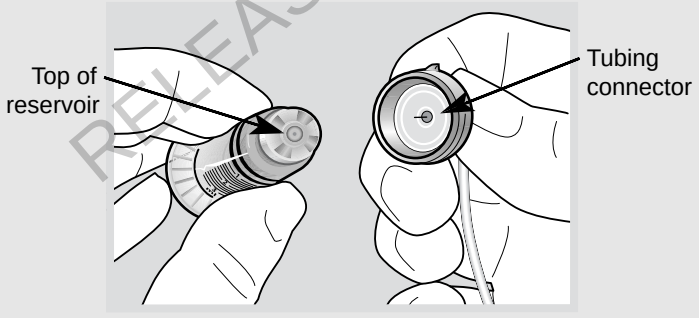
   Another message appears to let you know that your pump has finished rewinding, and then the New Reservoir screen appears.

RELEASED

3. Follow the instructions in the next section to fill your reservoir.

Filling the reservoir

WARNING: Do not use the reservoir or infusion set if any liquid gets on the top of the reservoir or inside the tubing connector (as shown in the image). Liquid can temporarily block the vents. This may result in the delivery of too little or too much insulin, which can cause hypoglycemia or hyperglycemia. If any liquid gets on the top of the reservoir or inside the tubing connector, start over with a new reservoir and infusion set.

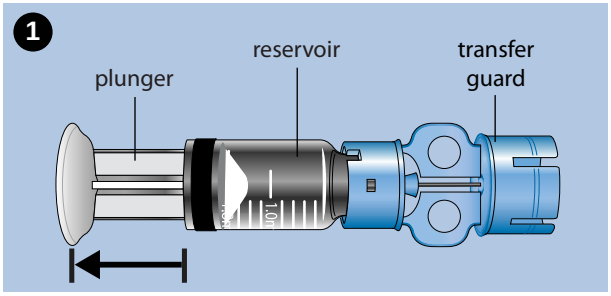


RELEASED

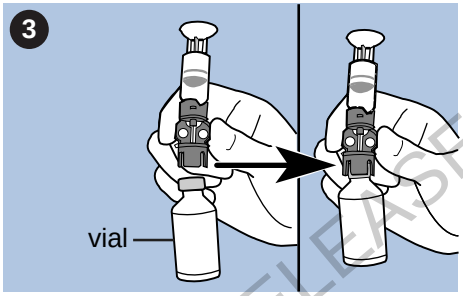
WARNING: Always allow your insulin to reach room temperature before use. Cold insulin can cause air bubbles in the reservoir and tubing which may result in inaccurate insulin delivery.

To fill the reservoir, do these steps:

1. Remove the reservoir from the package, and fully extend the plunger.

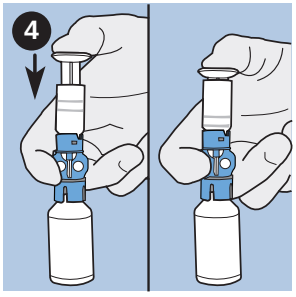


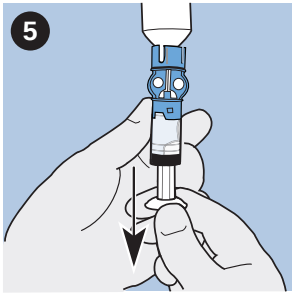
2. Swab the vial with alcohol (not shown).
3. Press the transfer guard onto the vial without pushing down on the plunger.

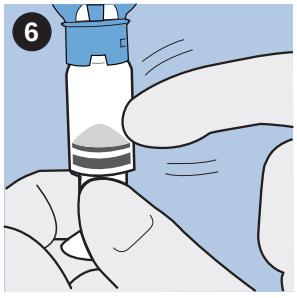


RELEASED

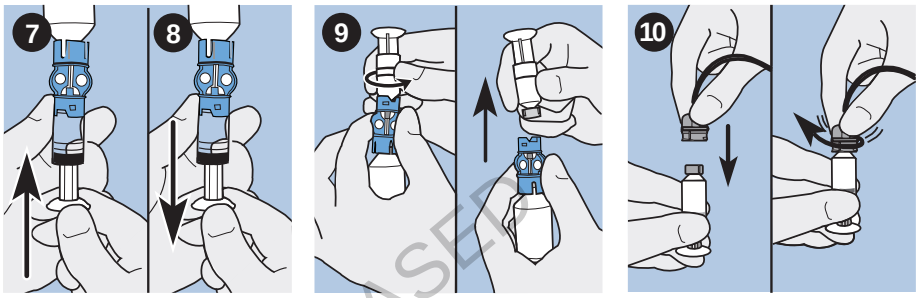
4. Push down on the plunger to pressurize the vial. Hold down the plunger rod.
5. While still holding down the plunger rod, flip the vial over so the vial is on top. Slowly pull down on the plunger to fill the reservoir.
6. Gently tap the side of the reservoir to make any air bubbles rise to the top of the reservoir.





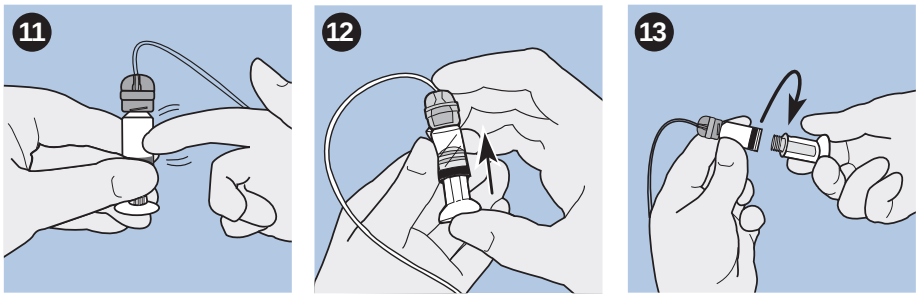


7. Slowly push up on the plunger just enough to remove any air bubbles from the reservoir.
8. Slowly pull down on the plunger to fill the reservoir to the number of units desired.
9. To avoid getting liquid on the top of the reservoir, flip the vial over so that it is upright. Turn the reservoir counter-clockwise, then pull straight up to remove the reservoir from the transfer guard.
10. Place the tubing connector onto the reservoir. Turn the connector clockwise, pressing gently against the reservoir until you feel it slide in. Push in and continue turning until the reservoir and the connector lock with a click.



RELEASED

11. Tap the side of the reservoir to remove any air bubbles.
12. To purge air bubbles that have risen to the top of the reservoir, push up on the plunger until you see insulin in the tubing.
13. Without pulling, turn the plunger counter-clockwise to remove it from the reservoir.



14. Select **Next** from the New Reservoir screen.

The New Reservoir screen now instructs you to place the reservoir in your pump.

Note: If the New Reservoir screen has timed out and the Home screen appears, select **Load Reservoir** from the Home screen.

RELEASED

15. Follow the instructions in the next section to insert the reservoir into the reservoir compartment of your pump immediately after filling it.

Inserting the reservoir into your pump

Be sure to perform the following steps in the order they are presented.

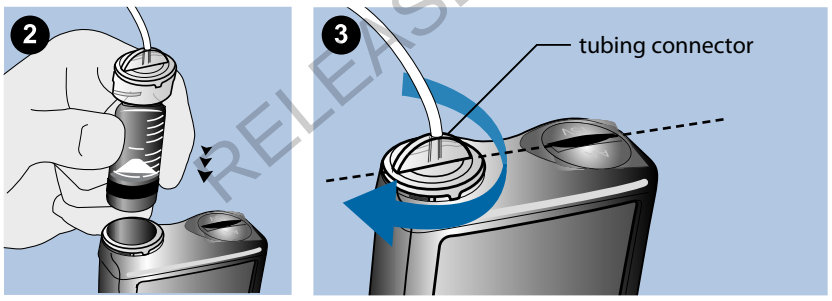
Caution: Do not insert the reservoir into your pump for the first time until you have received training.

WARNING: Never insert the reservoir into the pump while the tubing is connected to your body. Doing so could result in an accidental infusion of insulin, which may cause low BG.

You must rewind your pump before installing a new reservoir to ensure correct insulin amount.

To insert the reservoir into your pump:

1. If you are using the pump for the first time, remove the shipping cap from the reservoir compartment.
2. Rewind your pump if you have not yet done so. See *Rewinding your pump, on page 94* for more information.
3. Insert the reservoir into the top of the reservoir compartment.
4. Turn the tubing connector approximately a half-turn clockwise until the connector is locked. The tubing connector should be aligned horizontally with the pump case as shown in the following example.



RELEASED

5. Your pump should be displaying the New Reservoir screen shown in the following example. Select **Next** to continue.

Note: If the New Reservoir screen has timed out and the Home screen appears, select **Load Reservoir** from the Home screen. After the New Reservoir screen appears, you may have to select **Next** to get to the screen shown previously.

6. When the reservoir is inserted, select and hold **Load** until you see a checkmark on the screen and your pump beeps or vibrates. Holding **Load** moves the piston up in the reservoir compartment until it engages with the bottom of the reservoir.

Note: If you press the **Back** button after the loading process begins, a Loading incomplete alarm will occur.

RELEASED

When the loading process is completed, the following screen appears.

7. Select **Next** to continue.
8. Follow the instructions in the next section to fill the tubing with insulin.

Filling the tubing

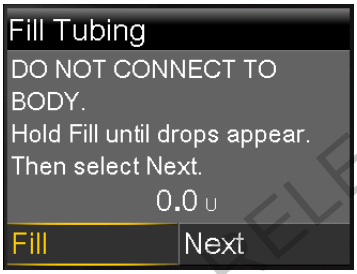
You need to fill the infusion set tubing with insulin before you insert the set into the body.

WARNING: Make sure the infusion set is disconnected from your body before you rewind your pump or fill the infusion set tubing. Never insert the reservoir into the pump while the tubing is connected to your body. Doing so could result in an accidental infusion of insulin, which may cause low BG.

WARNING: Always check your tubing for air bubbles. Continue to press Fill until the bubbles have been removed from the tubing. Air bubbles may result in inaccurate insulin delivery.

To fill the tubing:

1. After you load your reservoir and select **Next** from the Load Reservoir screen, the Fill Tubing screen appears.



RELEASED

2. Select and hold **Fill**. Your pump beeps six times to let you know it is positioning the reservoir. Continue holding **Fill** until insulin droplets form on the tip of the infusion set needle, then release. Your pump beeps as it fills the tubing, and the amount of insulin you are using appears on the screen.

   If you get the Max Fill Reached alarm, it means you have used more than 30 units of insulin to fill your tubing. For details, go to *Pump alarms, alerts, and messages, on page 202*, and see the description for Max Fill Reached.

3. Select **Next** to continue.
4. Follow the instructions in the next section to insert the infusion set into your body before filling the cannula.

Inserting the infusion set

WARNING: Do not remove the reservoir from the pump while the infusion set is connected to your body. This could lead to over or under delivery of insulin.

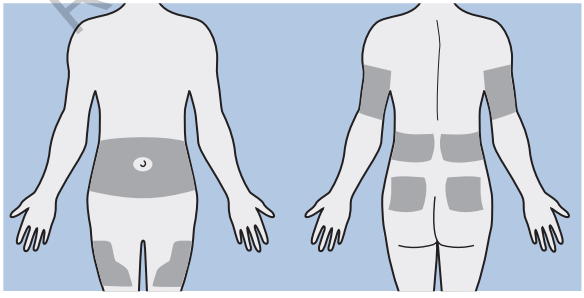
You must have completed the following procedures, as described previously, before inserting the infusion set into your body:

- Rewinding your pump.
- Filling your reservoir.
- Inserting the reservoir into pump.
- Filling the tubing with insulin.

Shown here are the best body areas (shaded) for infusion set insertion. Avoid the 5.0 cm (2-inch) area around the navel to help ensure a comfortable infusion site and to help with adhesion.

RELEASED

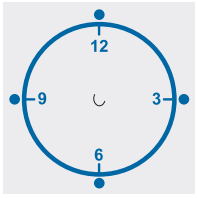
Caution: Rotate the infusion set insertion sites so that they do not become overused.



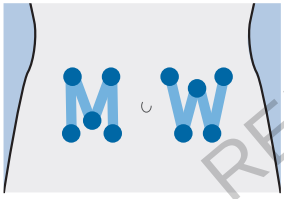
Caution: Change your infusion set every two to three days to avoid infusion set occlusion or site infection.

To keep sites healthy, some people find it helpful to use a visual scheme to help them rotate their insertion sites in an organized way. For example, here are two commonly used methods. For maximum effectiveness, use both methods, alternating between them:

- Visualize an imaginary clock drawn on your abdomen surrounding your belly button. Rotate infusion set insertion sites by starting at 12 o'clock and then rotate the site clockwise to 3 o'clock, 6 o'clock, and so on.



- Imagine a letter M or a letter W on either side of your belly button. Start at the end of one letter and proceed through the letter, rotating to each intersection in turn.



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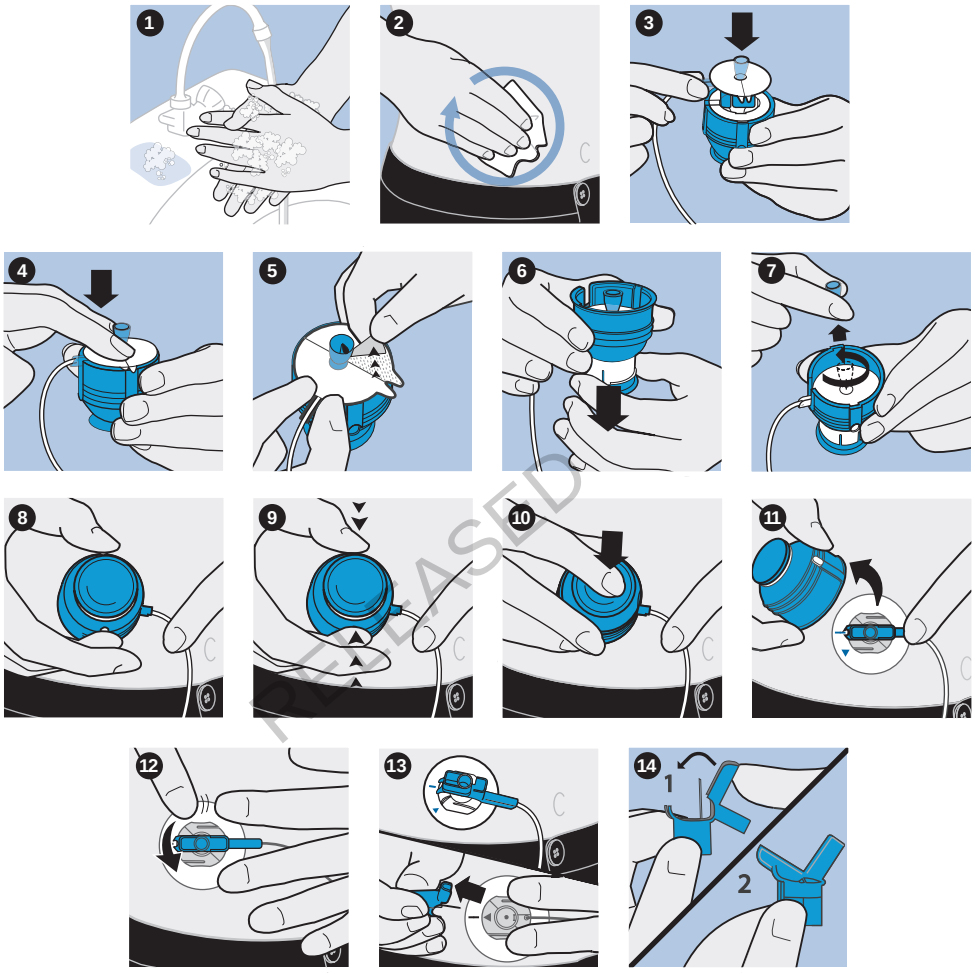
Medtronic Diabetes offers a variety of infusion sets for your pump. The instructions for the Quick-set infusion set are provided here as an example.

After your infusion set is inserted, see *Filling the cannula, on page 105* to fill the infusion set cannula.

Quick-set infusion set (with Quick-serter™)

There are different infusion sets that you can use with your pump. As an example, the following procedure shows how to insert the Quick-set infusion set. Always refer to the instructions that shipped with your infusion set.



RELEASED

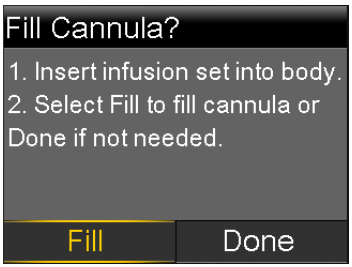
Filling the cannula

Filling the soft cannula with insulin is required after the infusion set is inserted into your body and the introducer needle is pulled out. The insulin amounts required to fill the cannula depend on the type of infusion set you are using. Refer to your infusion set instructions for this information.

Note: If you are using an infusion set with a needle, you do not need to fill the cannula. Select **Done** when the system prompts you to continue with the fill process.

To fill the cannula:

1. After you fill your tubing and insert your infusion set, the Fill Cannula? screen appears.

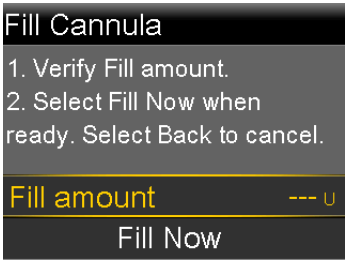


Note: If your screen turns off before you are ready to fill your cannula, press any button on your pump to turn it on again.

RELEASED

2. To fill your cannula now, select **Fill**. If you are using an infusion set with a needle, you do not need to fill the cannula. Select **Done** to skip this step.

   The Fill Cannula screen appears.

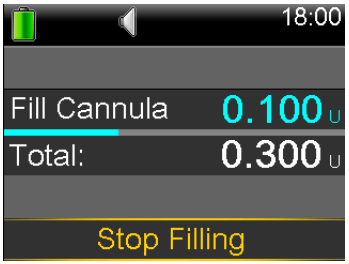


3. Adjust the Fill amount for your particular infusion set, and then select **Fill Now**. If you are unsure about the fill amount, see the instructions that came with your infusion set.
4. As the cannula starts filling, your screen displays the amount of units being delivered. The pump beeps or vibrates when the delivery is complete.

After the cannula is filled, the Home screen appears. Your pump is now ready to deliver insulin.

To stop filling the cannula:

1. Select **Stop Filling**, to stop filling the cannula.



2. Select **Yes**.

   The Fill Stopped screen appears confirming amount delivered.

3. Select **Done**.

Disconnecting and reconnecting your infusion set

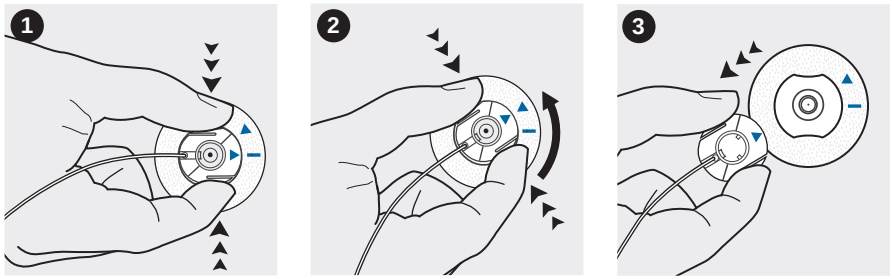
As an example, these steps show you how to disconnect and reconnect the Quick-set infusion set. If you are using an infusion set other than Quick-set, always refer to the instructions that shipped with the infusion set.

RELEASED

Disconnecting the Quick-set infusion set

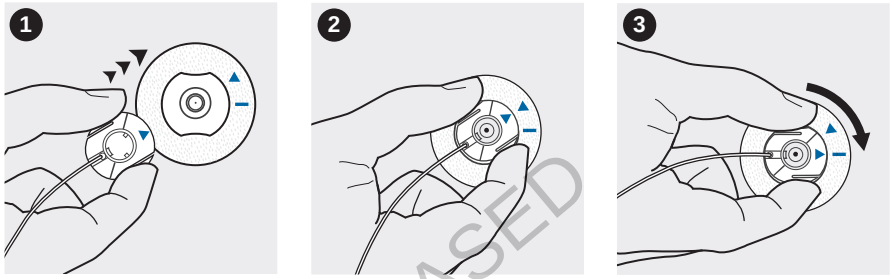
The Quick-set infusion set allows you the freedom to temporarily disconnect from your pump without removing the infusion set from your body.

1. Hold the side grips of the connector part with your fingers.
2. Twist the connector counter-clockwise.
3. Remove the connector from the site.



Reconnecting the Quick-set infusion set

Place the connector part (flat side facing down) on the infusion site until it is fully seated. Do not squeeze the connector part by the flat side grips.



RELEASED

6

meter

RELEASED

RELEASED

6 Meter

You can wirelessly connect up to six compatible Bayer meters to your pump. If you do not connect a meter to your pump, you must enter your blood glucose readings manually. To wirelessly connect your pump and meter, you will need the following items:

- MiniMed 640G insulin pump
- Compatible Bayer meter
- Compatible Bayer meter user guide

RELEASED

About your compatible Bayer meter

You can set up your pump to automatically receive blood glucose readings from your compatible Bayer meter. When the pump is on the Home screen, it beeps or vibrates when it receives a blood glucose reading from the meter. Your BG Meter screen appears, where you can view your current blood glucose reading and, if necessary, deliver a bolus. Once received, your BG values will appear on your pump screen for 12 minutes, along with any insulin that is still active from any previous boluses. If your blood glucose reading is outside the range of 3.9 to 13.9 mmol/L, the pump displays an alert. In this case, treat your low blood glucose or high blood glucose as directed by your healthcare professional.

Note: In order to ensure accuracy, do not use a BG meter reading if more than 12 minutes have passed since you have taken the reading.

The compatible Bayer meter may not be available in all countries.

You can also deliver a Normal Bolus or Preset Bolus from your compatible Bayer meter. For more information about setting up your pump to use the Remote Bolus feature, see *Setting up Remote Bolus, on page 112*. Consult your healthcare professional before using the Remote Bolus feature.

Wirelessly connecting your pump and meter

Always refer to your compatible Bayer meter user guide for instructions on connecting the meter to the pump.

Setting up Remote Bolus

Remote Bolus allows you to send a Normal Bolus or Preset Bolus remotely from your meter. To access this option, your compatible Bayer meter and pump must be wirelessly connected, and the Remote Bolus option on your pump must be turned on. Consult your healthcare professional before using the Remote Bolus feature.

The following procedure describes how to turn the Remote Bolus feature on or off. For information on using Remote Bolus, see the user guide that came with your compatible Bayer meter.

RELEASED

Note: Remote Bolus default setting is on.

To turn on or off Remote Bolus:

1. Make sure that your pump and compatible Bayer meter are connected.
2. Go to the Remote Bolus screen.

   Menu > **Utilities** > **Remote Bolus**

   The Remote Bolus screen appears.
3. Select **Remote Bolus** to turn the feature on or off.
4. Select **Save**.

Deleting a meter from your pump

Follow this procedure to delete your compatible Bayer meter from the pump.

To delete the meter from the pump:

1. Go to the Manage Devices screen.

   Menu > Utilities > Device Options > Manage Devices

   The Manage Devices screen appears.

2. Identify and select your meter by the serial number. See your compatible Bayer meter user guide for instructions on locating your serial number.
3. Select **Delete**.
4. A screen appears confirming that you would like to delete the device. Select **Yes** to confirm or **No** to cancel.

RELEASED

RELEASED

7

history and events

RELEASED

RELEASED

7 History and events

This chapter describes the History and Event Markers features. The History screens provide personal pump therapy details, including information about your insulin deliveries, BG meter readings, sensor glucose (SG) readings, and any alarms and alerts you received. The Event Markers feature allows you to enter and save information, such as manual BG readings, carbohydrates eaten, and exercise.

RELEASED

History

The History feature includes the Summary, Daily History, and Alarm History screens. The SG Review and ISIG History screens are available if you are using the Sensor feature.

Summary screen

The Summary screen shows details about past insulin deliveries and meter readings. If you are using a sensor, the Summary screen also shows information about your sensor alerts and sensor glucose readings.

You can view historical details for a single day, or you can select multiple days to view an average of all the results for the number of days that you selected.

To view your Summary screen:

1. Go to the Summary screen.

   Menu > History > Summary

2. Select the time period for the Summary screen.

   The Summary screen appears, showing information for the number of days that you selected.

3. You can scroll down to view the entire screen. If you are using the 1 Day view, you can use the < and > buttons on your pump to view the results for each day in history.

Understanding the Summary screen

The Summary screen separates information into five categories:

- overview
- bolus
- BG meter
- sensor
- SmartGuard

Summary screen: overview

The following table describes the overview portion of the Summary screen.

Note: If you are viewing a single day of Summary results, then the values shown are the actual results for the selected day. If you are viewing more than one day of Summary results, then the value is an average of the days that you selected.

RELEASED

Name	Description
TDD	Total daily dose of insulin units.
Basal	• Insulin units devoted to basal delivery. • Percentage of insulin devoted to basal delivery.
Bolus	• Insulin units devoted to bolus delivery. • Percentage of insulin devoted to bolus delivery.
Total Carbs	Daily carbohydrate amount, in grams or exchanges.

Summary screen: bolus

The following table describes the bolus portion of the Summary screen:

Note: If you are viewing a single day of Summary results, then the values shown are the actual results for the selected day. If you are viewing more than one day of Summary results, then the value is an average of the days that you selected.

Name	Description
Carb bolus only	• Total insulin units delivered using the Bolus Wizard with food amount only. • Number of times the Bolus Wizard delivered a food bolus only.
BG Correction only	• Total insulin units delivered using the Bolus Wizard with BG correction amount only. • Number of times the Bolus Wizard delivered a BG correction bolus only.
Carb bolus + BG Correction	• Total insulin units delivered using the Bolus Wizard with food and BG correction amount. • Number of times the Bolus Wizard delivered a carb and BG correction bolus.
Manual Bolus	• Total bolus insulin units delivered using Manual Bolus, Preset Bolus, or Easy Bolus. • Number of bolus deliveries using Manual Bolus, Preset Bolus, or Easy Bolus.

RELEASED

Summary screen: BG meter

The following table describes the BG meter portion of the Summary screen:

Name	Description
BG	Total number of BG meter readings, including readings from a compatible Bayer meter and BG meter readings entered manually.
Average BG	Average BG meter readings.
Meter Low	Lowest BG meter readings received from a compatible Bayer meter.

Name	Description
Meter High	Highest BG meter readings received from a compatible Bayer meter.
Manual Low	Lowest BG meter readings entered manually.
Manual High	Highest BG meter readings entered manually.

Summary screen: sensor

The following table describes the sensor portion of the Summary screen. If the sensor feature has never been turned on, this portion of the screen does not appear. If the sensor feature was turned on at least once, but is currently turned off, this portion of the screen appears gray.

Name	Description
SG Average	Average sensor glucose value.
SG Std. Dev.	Standard deviation of the SG readings.
Above High Limit	Percentage of SG readings that were above your high glucose alert limit. If you have not set a high glucose alert limit, your pump uses the default values. For more details on setting your high glucose alert limit, see *High settings, on page 156*.
Within Limits	Percentage of SG readings that were between your high and low glucose alert limits. If you have not set your high and low glucose alert limits, your pump uses the default values. For more details on setting your high and low glucose alert limits, see *High settings, on page 156* and *Low settings, on page 157*.
Below Low Limit	Percentage of SG readings that were below your low glucose alert limit. If you have not set a low glucose alert limit, your pump uses the default values. For more details on setting your low glucose alert limit, see *Low settings, on page 157*.
Alert before high	Number of Alert before high alerts that occurred.
Alert on high	Number of Alert on high alerts that occurred.
Rise Alert	Number of Rise alerts that occurred.
Alert before low	Number of Alert before low alerts that occurred.
Alert on low	Number of Alert on low alerts that occurred.

RELEASED

Summary screen: SmartGuard

The following table describes the SmartGuard portion of the Summary screen. For details on the SmartGuard feature, see *SmartGuard, on page 152*.

Name	Description
Suspend before low	The average number of Suspend before low events per day.
Suspend on low	The average number of Suspend on low events per day.
Time suspended by sensor	The average duration (amount of time) suspended as a result of Suspend on low or Suspend before low events per day.
# SG readings	Number of SG readings per day.

Daily History

The Daily History screen displays a list of actions you performed on your pump or event entries that you made for the selected day, such as your BG meter readings, bolus deliveries, any temp basal rates you have used, and so on. The list displays the most recent action or event first. From this list, you can display further details about any action or event.

RELEASED

To view your Daily History:

1. Go to the Daily History screen.

   Menu > History > Daily History

   A list of dates appears.

2. Select a specific date of history to view. A list appears with any pump actions or events entered on the specified day.

3. You can select any item in the list to open the Detail screen, which displays more information about the selected action or event. For example, if you view the details of a bolus delivered using the Bolus Wizard, the Detail screen shows you all of the data associated with that bolus, such as the BG correction amount, active insulin adjustment, carbs entered, and calculated bolus.

Alarm History

The Alarm History screen displays a list of alarms and alerts that occurred on the selected day. The list displays the most recent alarm or alert first. From this list, you can display further details about any alarm or alert.

To view your Alarm History:

1. Go to the Alarm History screen.

   Menu > History > Alarm History

   A list of dates appears.

2. Select a specific date of alarm history to view. A list appears showing any alarms or alerts that occurred on the specified day.

3. You can select any alarm or alert in the list to open the Alarm Detail screen, which displays more information about the selected alarm or alert.

Using Sensor Glucose Review

The Sensor Glucose Review feature allows you to view a graph of your SG history, based on high and low limits you enter. You can view information for one day, or view an average of your SG data over a number of days.

This Sensor Glucose Review feature is available if you are using the Sensor feature.

RELEASED

Note: The limits that you set in this screen are for the purpose of viewing your sensor glucose data only, and are not the same as the High and Low Alert Limits used for your sensor alerts. Changing your Sensor Glucose Review limits does not affect your high and low glucose limits.

To review your sensor glucose history:

1. Go to the SG Review screen.

   Menu > History > Sensor Glucose Review

   The SG Review screen appears. The high and low limits that appear are either the values you entered for the last SG Review, or the default values of 10 mmol/L for the High Limit and 3.9 mmol/L for the Low Limit.

2. Enter the High Limit and Low Limit that you want to use for the sensor glucose review.

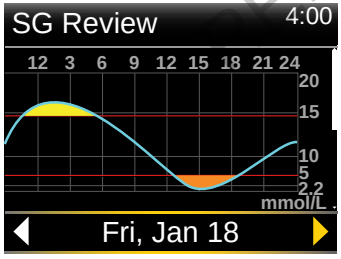
   There must be a minimum of 1.1 mmol/L difference between the high and low SG limits.

3. Enter the number of days of sensor glucose history to average, and select **Next**.

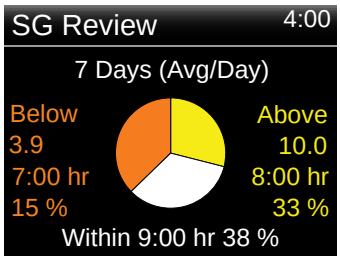
   A graph of your SG data appears. If you specified one day of history to view, the graph shows details about when your SG was above, below, or within your specified limits. You can scroll down to view the number of hours and percentage of time you were above, within, and below your SG limits.

   If you have no data saved, a message appears on the screen letting you know there is no data available.

RELEASED



   If you view information for multiple days, the graph shows the average percentage of time that your SG was above, below, or within your specific limits.



ISIG History

ISIG represents a signal measured by the sensor that is used to calculate your sensor glucose value. The ISIG History feature shows the history of your ISIG values over the previous 24-hour period. This information is primarily used by support personnel for troubleshooting, and is available only after you have turned on the Sensor feature.

To view your ISIG History:

1. Go to the ISIG History screen.

   Menu > History > ISIG History

2. Select a time for which you want to view the ISIG history. The ISIG history appears for the hour you selected.

RELEASED

Event Markers

The Event Markers feature allows you to electronically save certain types of information.

When using this feature, enter events when they happen because the system records the time of the entry. You cannot change entries after you have put the information into your pump. You can view your saved events in the Daily History screen.

The entered information can be sent to CareLink™ Personal therapy management software. There it can be used to generate reports you can share with your healthcare professional.

To enter Event Markers:

1. Go to the Event Markers screen.

   Menu > Event Markers

2. Select and enter event information for any of the following categories:

BG		If you are not using the Bolus Wizard or a compatible Bayer meter to record your BG meter readings in your pump, you can enter them here. If you are using a sensor, you may use a BG meter reading you enter here for calibration. You can also enter non-calibration BG meter readings, such as those readings taken when eating or when your BG is rising or falling rapidly.
Injection		Enter the number of units of any insulin you have given by injection. **Note:** Insulin units entered using the injection event marker are not added to your Active Insulin amount tracked on the pump.
Food		Enter the amount of carbohydrates that you have eaten or drunk that have not been entered in the Bolus Wizard. For example, you might enter carbs that you ate to correct a low BG. Do not enter carbs here that you have already entered in the Bolus Wizard.
Exercise		Enter the length of time you exercised. It is helpful to be consistent and enter the information either before or after each time you exercise.
Other		Examples of Other event markers can include when you take medications, when you feel ill, or when you are under stress.

RELEASED

RELEASED

8

reminders

RELEASED

RELEASED

8 Reminders

Reminders help you remember to do important routine activities. There are specific reminders that prompt you to check your BG after a bolus, give a food bolus, check your reservoir level, and change your infusion set. There are also personal reminders you can use for any purpose. If you have the sensor feature turned on, the calibration reminder prompts you to calibrate your sensor.

RELEASED

Personal reminders

The Personal reminders include six numbered reminders, along with the specific reminders for BG Check and Medication.

To create a new Personal reminder:

1. Go to the Personal screen.

   Menu > Reminders > Personal

2. Select **Add New**.

   The Select Name screen appears showing the available reminders.

3. Select the reminder that you want to set.

   The Edit screen appears for the selected reminder.

4. Enter the time that you want the reminder to occur.

5. Select **Save**. The Personal reminder occurs at the specified time each day unless you change or delete it.

To change, rename or delete an existing Personal reminder:

1. Go to the Personal screen.

Menu > Reminders > Personal

2. Select the reminder that you want to change.
3. Do one of the following:
   - Select **Reminder** to turn this reminder on or off.
   - Select **Edit** to change the time of the reminder.
   - Select **Rename** to select a new name for this reminder.
   - Select **Delete** to delete this reminder.

Bolus BG Check reminder

Bolus BG Check reminder helps you remember to check your blood glucose after a bolus. After you start a bolus, the pump asks you when you want to be reminded to check your blood glucose. The timer counts down from the time the bolus started.

Note: The Bolus BG Check reminder is not available when you deliver a bolus using the Remote Bolus feature from your compatible Bayer meter.

RELEASED

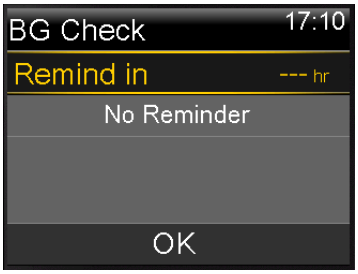
To turn on or turn off Bolus BG Check reminders:

1. Go to the BG Check screen.

   Menu > Reminders > Bolus BG Check
2. To turn the reminder on or off, select **Reminder**.
3. Select **Save**.

To use a Bolus BG Check reminder when delivering a bolus:

1. After you turn on the Bolus BG Check reminder, each time you start a bolus, the following screen appears:



2. Enter a time from 30 minutes to 5 hours, in 30 minute increments. Select **OK**. If you do not want a reminder after the bolus, select the dashes without adding a time, and then select **OK**. If needed, press ⌄ to return to the dashes.

Missed Meal Bolus reminder

The Missed Meal Bolus reminder alerts you if a bolus is not delivered within a time period that you set. These time periods are usually set around your typical meal times to help ensure a meal bolus is not missed. You can set up to eight Missed Meal Bolus reminders.

RELEASED

To create a new Missed Meal Bolus reminder:

1. Go to the Missed Meal Bolus screen.

   Menu > **Reminders** > **Missed Meal Bolus**

2. Select **Add New**.
3. Select **Start Time**, and enter a time.
4. Select **End Time**, and enter a time. The time range is from one minute to 24 hours.
5. Select **Save**.

To turn on or off, change, or delete existing Missed Meal Bolus reminders:

1. Go to the Missed Meal Bolus screen.

   Menu > **Reminders** > **Missed Meal Bolus**

2. Select one of the reminders that you have already created.
3. Change any of the following:
   - Select **Reminder** to turn this reminder on or off.
   - Select **Edit** to change the time of this reminder.

- Select **Delete** to delete this reminder.

Low Reservoir reminder

The Low Reservoir reminder alerts you when the insulin level in your reservoir is low. This feature allows you to program your pump to generate a reminder before your reservoir is empty. You can select one of the following types of Low Reservoir reminders:

- **Units** – alerts you when your reservoir has a specified number of units remaining, and then alerts you again when half of remaining units are used.
- **Time** – alerts you when there is a specified amount of time remaining before your reservoir is empty and then again one hour before insulin runs out, depending on your programmed basal insulin delivery.

Note: The amount of time or units remaining in your reservoir can be found on the Quick Status screen. For more information on accessing the Status Screens, see *Viewing the Status screens, on page 32*.

RELEASED

If you use Time for your Low Reservoir reminder, be aware that the reminder time is based only on your basal insulin delivery rate. If you give a bolus, the time remaining will decrease more quickly.

For example, if your reservoir has 10 hours remaining when you go to bed at night, and you sleep for eight hours without giving any bolus insulin, you will still have two hours of basal insulin remaining when you wake up. In contrast, suppose your reservoir has 10 hours remaining when you leave the house for work in the morning. If you give boluses to cover your mid-morning snack and your lunch, the number of hours remaining decreases accordingly, and your insulin will run out before you end your eight-hour work day.

WARNING: When the pump detects a low reservoir condition during a bolus or fill cannula delivery, the Low reservoir alert displays. When delivery has finished, check the amount left in the reservoir to make sure your pump does not run out of insulin, as this could lead to an under delivery of insulin.

Low Reservoir reminder setup:

1. Go to the Low Reservoir screen.

   Menu > Reminders > Low Reservoir

2. Select **Type** to set the reminder using either **Units** or **Time**.
3. Depending on the type you selected, do one of the following:
   - Select **Units** to enter the number of units. You can set a value from 5 units to 50 units.
   - Select **Time** to enter the number of hours you want to use for your reminder. You can enter from 2 to 24 hours.
4. Select **Save**.

Set Change reminder

The Set Change reminder helps you remember to change your infusion set. After you turn on this reminder, it automatically tracks the time between infusion set changes and reminds you to change your infusion set.

RELEASED

To turn on or off, or change the Set Change reminder:

1. Go to the Set Change screen.

   Menu > Reminders > Set Change

2. Select **Reminder** to turn the reminder on or off. If you turn on the reminder, select **Time** and choose two or three days for the reminder.
3. Select **Save**.

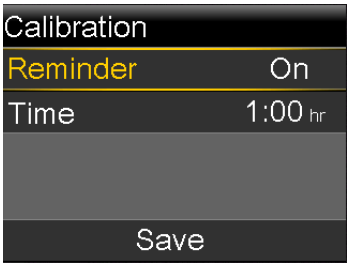
Calibration reminders

The Calibration reminder is available if you are using the Sensor feature. This feature helps you remember to calibrate your sensor. For example, if you set your reminder to four hours, you receive a Calibrate By alert four hours before the next BG meter reading is due.

To turn on or off, or change the Calibration reminder:

1. Go to the Calibration screen.

   Menu > Reminders > Calibration



2. Select **Reminder** to turn the reminder on or off.
3. If you turn on the reminder, select **Time** and enter a time between 5 minutes and 6 hours.
4. Select **Save**.

RELEASED

9

general settings

RELEASED

RELEASED

9 General settings

This chapter provides information about common tasks for various settings.

Airplane Mode

Airplane Mode temporarily stops wireless communication with your pump. Use this mode during airline travel when you are instructed to turn off wireless devices.

Check airline policies for specific instructions about operating medical devices during a flight. Check local airport policies for specific instructions about medical devices and security procedures.

The following table provides special instructions when using Airplane Mode and additional devices with your pump:

When using this device:	Do this:
Compatible Bayer meter	When Airplane Mode is turned on, the Remote Bolus feature is not available, and you must enter BG meter readings manually. When Airplane Mode is turned off, use your compatible Bayer meter normally.
Non-linked BG meter	Use your non-linked BG meter normally whether Airplane Mode is on or off.

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When using this device:	Do this:
Sensor and transmitter	When Airplane Mode is turned on, your pump does not receive sensor readings from your transmitter. Your transmitter continues to collect your sensor readings, and can store up to 10 hours of sensor data. When Airplane Mode is turned off, it can take up to 15 minutes before the pump and the transmitter start to wirelessly communicate again. The transmitter begins to send the last 10 hours of your sensor information to the pump. When you turn off Airplane Mode: • If Airplane Mode was turned on for six hours or less, wait 15 minutes for the sensor and transmitter to wirelessly send your pump the missing sensor glucose readings. • If Airplane Mode was turned on for more than six hours, disconnect and reconnect the transmitter and sensor, and then select **Reconnect Sensor** when it appears on the pump screen.

RELEASED

To turn on or turn off Airplane Mode:

1. Go to the Airplane Mode screen.

   Menu > **Utilities** > **Airplane Mode**

2. Select **Airplane Mode** to turn the feature on or off.
3. Select **Save**.

   When Airplane Mode is turned on, the status bar shows the Airplane Mode icon in place of the Connection icon.

Audio Options

The Audio Options screen lets you change the volume of most alerts and notifications, and set the audio and vibrate settings. You can choose one of the three audio options:

- audio
- vibrate

- audio and vibrate

The audio option that you are currently using displays on the status bar. For more information, see *Status bar, on page 28*.

To adjust the audio and vibrate settings:

1. Go to the Audio Options screen.

   Menu > Audio Options

2. Select the Audio or Vibrate option you want to use.
3. If Audio or Audio & Vibrate option is selected, the volume can be changed. Select **Volume** and use left or right button to the desired level.
4. Select **Save**.

Auto Suspend

Auto Suspend is a safety feature that stops all insulin delivery and sounds an alarm if you do not press any buttons for a specified period of time. For example, your healthcare professional may have you set the time based on the number of hours that you typically sleep at night. Discuss with your healthcare professional how to best use this feature.

RELEASED

To set up Auto Suspend:

1. Go to the Auto Suspend screen.

   Menu > Insulin Settings > Auto Suspend

2. Select **Alarm**.
3. Select **Time** and enter the number of hours that you want to set.
4. Select **Save**.

Block Mode

The Block Mode feature allows caregivers, such as parents of a young child, to restrict access to critical pump settings.

Caution: You can still manually suspend the pump while in block mode. This could result in high blood glucose and ketoacidosis.

When Block Mode is on, you cannot start a new bolus delivery, start a new basal pattern, or start a new temp basal delivery. However, any previous bolus and basal deliveries continue normally, and the pump user can stop a bolus delivery at any time.

When your pump is in Block Mode, you can suspend insulin delivery, receive SG values, receive BG values from a compatible Bayer meter, review history, test the pump, and clear alarms and alerts. However, you cannot change any settings.

WARNING: Block Mode does not prevent Remote Bolus deliveries from your compatible Bayer meter. When your pump is in Block Mode, you can still deliver a bolus from your compatible Bayer meter using the Remote Bolus feature.

To turn Block Mode on or off:

1. Go to the Block Mode screen.

   Menu > Utilities > Block

2. Select **Block Mode** to turn the feature on or off.
3. Select **Save**. While Block Mode is turned on, a lock icon displays on the status bar.

   If you are turning on Block Mode, a message appears asking if you would like to change your Remote Bolus setting as well. This message appears only if the Remote Bolus setting was on.
4. Select **Yes** to change Remote Bolus setting.
5. Select **Remote Bolus** to turn the feature on or off.
6. Select **Save**.

RELEASED

Carb Unit

The Carb Unit setting determines whether to enter and display carbohydrates in grams (g) or exchanges (exch). You enter carbohydrate information when using the Bolus Wizard and recording food in Event Markers.

To change the Carb Unit setting:

1. Go to the Carb Unit screen.

Menu > Utilities > Carb Unit

2. Select either **Grams** or **Exchanges**.
3. Select **Save**.

Display Options

The Display Options allow you to increase or decrease the brightness of your screen. From the Display Options screen, you can also adjust the amount of time the backlight stays on after you press a button.

To adjust the display options:

1. Go to the Display Options screen.

   Menu > Utilities > Display Options

2. Select **Brightness** to adjust the brightness of your screen. You can set a level from 1 to 5, or select **Auto** to have the screen automatically adjust to your current environment.

   Note: The brightness setting you select can affect the life of your battery. For a longer lasting battery, consider using a lower level setting.

RELEASED

3. Select **Backlight** to adjust the timeout for the backlight on your pump screen. You can select 15 seconds, 30 seconds, 1 minute, or 3 minutes.

   Note: The backlight can affect the life of your battery. For a longer lasting battery, consider setting the screen timeout to 15 seconds.

4. Select **Save**.

Language

You can change the language that your pump uses to display information.

To change the Language setting:

1. Go to the Language screen.

   Menu > Utilities > Language

A checkmark indicates which language is active.

2. Select your desired language.
3. Select **Yes** when the confirmation message appears.

Managing your pump settings

Manage Settings lets you save, restore, or clear your settings.

The following table describes the Manage Settings options:

Save Settings	Saves a record of your current settings that you can use if a future event requires you to re-enter your settings.
Restore Settings	Allows you to restore your settings, using the backup settings that you saved using the Save Settings feature.
Clear All Settings	Erases your settings and returns them to the factory defaults. To use your pump again after clearing all settings, you must use Restore Settings. This enables you to restore a previous version of your settings or enter your settings again.
Clear Active Insulin	This option appears only if you have never cleared your active insulin. Use this feature when you are ready to use your pump with insulin for the first time. You can only clear your active insulin once.
Settings History	Displays a history of recent activities that relate to managing your settings, such as saving, clearing, and restoring your settings.

RELEASED

Saving your settings

Saving a record of your settings allows you to restore your settings at a later date, if necessary.

To save your current settings:

1. Go to the Manage Settings screen.

   Menu > Utilities > Manage Settings

2. Simultaneously press and hold > and ↩ until the Manage Settings menu appears.
3. Select **Save Settings**.

If these are the first settings you have saved, a message appears telling you that your settings are saved.

If you have previously saved settings, a message appears asking if you would like to replace your previous settings with your current settings. Select **Yes** to accept. Select **No** to cancel.

Restoring your settings

This option allows you to replace your current pump settings with the last settings that you have saved. The Restore Settings menu option is available only if you have previously saved your settings.

To restore your previous settings:

1. Go to the Manage Settings screen.

   Menu > Utilities > Manage Settings

2. Simultaneously press and hold > and ↩ until the Manage Settings menu appears.
3. Select **Restore Settings**.
4. To replace your current settings with your previous settings, select **Yes**. To cancel, select **No**.

RELEASED

Clearing your settings

The Clear All Settings feature erases your current settings and returns them to the factory defaults. After you clear your settings, your pump displays the Startup Wizard, where you can re-enter your pump settings. You must re-enter your settings to continue using your pump.

The Clear All Settings feature does not delete wireless connections to other devices, such as your transmitter or compatible Bayer meter.

Caution: Do not clear the settings on the pump unless directed by your healthcare professional. If you clear your settings, you must re-enter all your personal settings as directed by your healthcare professional.

To clear all your settings:

1. Make sure the pump is not connected to your body.
2. Go to the Manage Settings screen.

   Menu > Utilities > Manage Settings
3. Simultaneously press and hold > and ↩ until the Manage Settings menu appears.
4. Select **Clear All Settings**.

   A confirmation screen appears asking if you want to clear all your settings.
5. To continue clearing your settings, select **Yes**. If you do not want to clear your settings, select **No**.

   If you clear your settings, your pump displays the Welcome screen and continues to the Startup Wizard. For more details on entering your startup settings, see *Entering your startup settings, on page 24*.

Clearing your active insulin

RELEASED

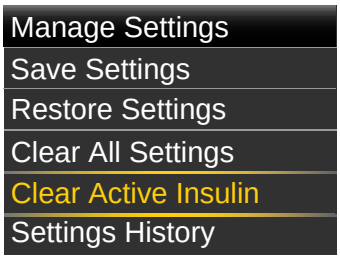
Use this feature when you are ready to use your pump with insulin for the first time. This feature clears any active insulin values that your pump has tracked, and sets the active insulin value to zero. If you have practiced delivering a bolus with your pump prior to using your pump with insulin, you must clear the active insulin. This ensures that the Bolus Wizard has an accurate active insulin amount for bolus calculations.

You can clear your active insulin only once. After you clear your active insulin, the feature is no longer available.

1. Go to the Manage Settings screen.

   Menu > Utilities > Manage Settings
2. Simultaneously press and hold > and ↩ until the Manage Settings menu appears.

   The Manage Settings screen appears. If you have never cleared your active insulin, the Clear Active Insulin option appears.



Note: If the Clear Active Insulin selection does not appear on the Manage Settings screen, it means that you have already cleared your active insulin on the pump.

3. Select **Clear Active Insulin**.

   A confirmation screen appears asking if you want to continue.

4. Select **Clear** to clear your active insulin value from your pump. If you do not want to clear your active insulin at this time, select **Cancel**.

   A message appears confirming that your active insulin value is cleared.

RELEASED

Viewing your pump setting history

The Settings History shows you a history of activities you have performed in the Manage Settings area, such as saving, restoring, or clearing your settings.

1. Go to the Manage Settings screen.

   Menu > Utilities > Manage Settings

2. Simultaneously press and hold > and ↩ until the Manage Settings menu appears.

3. Select **Settings History**.

   The Settings History screen appears.

Self Test

Self Test is a safety utility that allows you to check if your pump is operating properly. This self-diagnostic feature can be used for maintenance or to check that your pump is operating properly. Self Test is additional to the routine tests that run independently while the pump operates.

WARNING: Your insulin is suspended for up to two minutes while your pump runs the self test.

Self Test includes the following tests:

Test	Description
Display	Turns on the display for up to 30 seconds.
Notification light	Turns on the notification light for three seconds and then turns it off.
Vibration	Generates two vibration cycles.
Tone	Generates an alert tone, an Easy Bolus (step 1) tone, and an alarm tone.

The pump will run through a series of tests as listed in the previous table. Self Test requires you to observe the pump during the test.

To run the Self Test:

1. Go to the Self Test screen.

   Menu > Utilities > Self Test

   A message indicates that the Self Test is in progress.

   Self Test takes up to two minutes to complete. During that time, the display briefly turns white, the notification light blinks, the pump vibrates, and the pump beeps.

2. If Self Test does not detect a problem, the display returns to the Utilities screen.

   If Self Test detects a problem, a message appears with more information about the problem. If Self Test displays an error message or you observe the pump not behaving as indicated during the test, contact the 24 Hour HelpLine or your local representative.

RELEASED

Sensor Demo

Sensor Demo lets you see what the Home screen would look like if you were using the optional Continuous Glucose Monitoring (CGM) feature. For more information about sensor graphs, please see *The sensor graph, on page 191*.

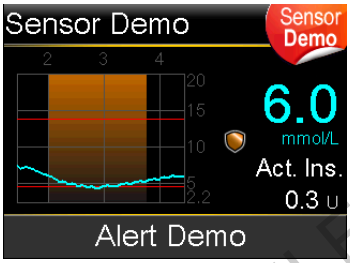
WARNING: Do not use Sensor Demo to make any decisions related to your therapy. Information seen in the Sensor Demo is not real data. It is an example of the type of information you can access when using the sensor feature. Making treatment decisions based on data that is not real can lead to low or high blood glucose conditions.

To view the sensor graphs:

1. Go to the Sensor Demo screen.

   Menu > Utilities > Sensor Demo

   A screen appears as an example of what your Home screen looks like when you are using the optional CGM feature.



RELEASED

2. Press **Select** to access the sensor graph examples.
3. From the sensor screen examples you can:
   - Press the < or > buttons to move the cursor across the graph. Examples of sensor data appear for the different time periods.
   - Press the ^ or v buttons to view graphs that cover different time periods. You can view 3-hour, 6-hour, 12-hour, and 24-hour graphs.

   Sensor Demo simulates a sensor glucose graph, showing an example of the general trend of glucose as it rises and falls over time. The top of the graph indicates the time of day, while the side bar shows the sensor glucose (SG) reading markers.
4. To exit Sensor Demo, press ↩.

To see and hear examples of sensor-related alerts:

1. Go to the Sensor Demo screen.

Menu > Utilities > Sensor Demo

2. Select **Alert Demo**.
3. To see and hear sensor-related alerts, select any of the listed alerts.
4. To exit an alert example, press ⌄, then select **OK** to clear the alert. To exit Sensor Demo, press ↩.

Time and date

Make sure the time and date are always set correctly on your pump. This is necessary to ensure the correct basal insulin delivery and to keep an accurate record of pump functions. You may need to change the time or the date if you travel to a different time zone or practice daylight saving time. After the time and date are changed, the pump adjusts all settings automatically.

To change the time and the date:

1. Go to the Time & Date screen.

   Menu > Utilities > Time & Date
2. Select and change the **Time**, **Time Format**, or **Date** as necessary. If you are using a 12-hour clock, be sure to specify AM or PM.
3. Select **Save**.

RELEASED

10

setting up continuous glucose monitoring

RELEASED

RELEASED

10 Setting up Continuous Glucose Monitoring

RELEASED

This chapter explains how to wirelessly connect your pump and transmitter, and how to enter your sensor settings and set up continuous glucose monitoring (CGM) on your pump. You will need the following:

- MiniMed 640G insulin pump
- Sensor glucose settings (provided by your healthcare professional)
- Enlite sensor
- Guardian 2 Link transmitter kit

WARNING: Do not make therapy treatment decisions based on sensor glucose values because sensor glucose and blood glucose values may differ. If your sensor glucose reading is low or high, or if you feel symptoms of low or high glucose, confirm your blood glucose with your BG meter prior to making therapy decisions to avoid severe low or high glucose conditions.

Understanding Continuous Glucose Monitoring (CGM)

The Sensor feature on the pump lets you integrate and use continuous glucose monitoring (CGM). CGM is a sensor glucose monitoring tool that uses a glucose sensor that is placed below your skin to continuously measure the amount of glucose in your interstitial fluid. CGM helps you better manage your diabetes by:

- Recording your glucose values throughout the day and night

- Showing the effects that your diet, exercise, and medication can have on your glucose levels
- Giving you additional tools to help you prevent high and low glucose levels

Note: If you lose sensor functionality, you will no longer have access to CGM features. For details on restoring sensor functionality, see *Troubleshooting sensor issues, on page 234*.

To learn more about the accuracy of sensor glucose (SG) readings versus blood glucose (BG) meter readings, see *Enlite™ Sensor Performance for the MiniMed™ 640G Insulin Pump*.

SmartGuard

SmartGuard is a feature that can automatically stop and resume insulin delivery based on your sensor glucose values and low limit. Your low limit should be set based on recommendations from your healthcare professional. When a SmartGuard suspend by sensor event occurs, basal insulin delivery automatically resumes if your sensor glucose values are rising and have met the specified criteria, or if the maximum suspend time of two hours is reached.

The following table shows the different SmartGuard settings you can use and where to find out more information.

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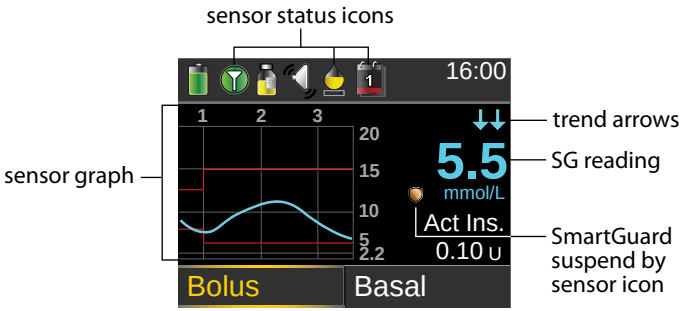
To learn more about:	Go to this section:
How to use SmartGuard to automatically suspend your insulin delivery before you reach your low limit.	*Suspend before low, on page 158*.
How to use SmartGuard to automatically suspend your insulin delivery when you reach your low limit.	*Suspend on low, on page 161*.
How SmartGuard automatically resumes your basal insulin delivery after a suspend by sensor event.	*Automatically resuming basal delivery after a SmartGuard suspend by sensor event, on page 164*.

To set up SmartGuard suspend by sensor settings, see *Setting up the Low Settings, on page 171*.

Home screen with CGM

When you turn on the Sensor feature, the Home screen on your pump changes to display a real-time graph that shows your sensor glucose (SG) information. For more information, see *Turning on the Sensor feature, on page 167*.



The following items appear on your Home screen with CGM:

Item	Description
Airplane Mode icon	The Airplane Mode icon appears in place of the Connection icon if Airplane Mode is turned on. When Airplane Mode is turned on, the pump cannot receive wireless communication from other devices. For more information about using Airplane Mode, see *Airplane Mode, on page 137*.

RELEASED

Item	Description
Calibration icon	The approximate time left until your next sensor calibration is due. The calibration icon appears only when the Sensor feature is turned on. The color and the fill level of the icon indicate the status. When your sensor is fully calibrated, the icon is solid green. As the time for your next sensor calibration approaches, the icon becomes emptier, and the color of the icon changes as shown in the following example. For more information about calibrating your sensor, see *Calibrating your sensor, on page 184*. When your sensor is initializing, the Calibration icon appears with three dots . If the time to your next sensor calibration is unavailable, the Calibration icon appears with a question mark .
Connection icon	The connection icon appears green when the Sensor feature is on and your transmitter is successfully communicating with your pump. The connection icon appears gray when the Sensor feature is turned on, but the transmitter is not connected or communication with your pump has been lost. For more information about the Sensor feature, see *Understanding Continuous Glucose Monitoring (CGM), on page 151*.
Sensor graph	Displays your SG readings over a period of 3 hours. The red lines represent your high and low SG limits. The blue line represents your SG trends during the specified period. For more information, see *The sensor graph, on page 191*.

RELEASED

Item	Description
Sensor Life icon	The number of days remaining in the life of your sensor. The sensor life icon appears only when the Sensor feature is turned on. The color and the fill level of the icon indicate the status. When you insert a new sensor, the icon is solid green. As your sensor life is used, the icon becomes emptier. The icon turns yellow when less than 24 hours remains in the life of your sensor. It turns red when less than 12 hours remains in the life of your sensor. If the number of days remaining in the life of your sensor is unavailable, the Sensor Life icon appears with a question mark .
SG reading	Shows your current SG reading which is sent wirelessly to your pump by the transmitter.
SmartGuard suspend by sensor icon	The SmartGuard suspend by sensor icon appears only when either the Suspend before low or Suspend on low feature is set to on. For details on the SmartGuard feature, see *SmartGuard, on page 152*. The SmartGuard suspend by sensor icon indicates the current status of the suspend features, as follows: • The icon is solid gold when either the Suspend on low or Suspend before low is turned on and ready. • The gold icon flashes if your insulin delivery is currently suspended due to a Suspend on low or Suspend before low event. • The icon appears gray with a line through it when neither suspend feature is available. The suspend features might be unavailable due to a recent suspend or because there are no SG values available. It might also be unavailable because the pump is not currently delivering insulin.
Trend arrows	Shows the rate at which the most recent sensor glucose level is rising or falling. For more information about trend arrows, see *Identifying rapid changes in sensor glucose, on page 192*.

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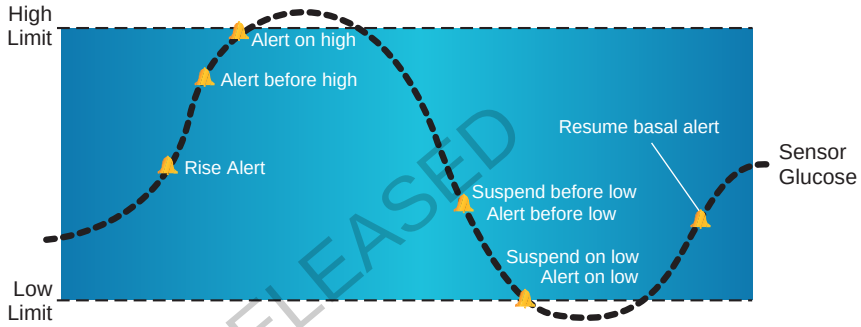
Note: Several items appear on both your Home screen without CGM and your Home screen with CGM. For more information, see *Home screen, on page 26*, and *Status bar, on page 28*.

Understanding glucose settings

There are several types of glucose alerts you can set to notify you if your glucose values are changing at a particular rate, or if they are approaching or have reached a specified low or high limit. You can also set your pump to automatically suspend insulin delivery before or when you reach your low limit.

The following graph shows the different high and low glucose alerts you can use.



RELEASED

The high alerts are described in the *High settings* section on *page 156*. For details on low alerts and suspend options, see *Low settings, on page 157*.

High settings

These settings alert you if your sensor glucose:

- is rising rapidly (Rise Alert)
- is approaching your high limit (Alert before high)
- has reached your high limit (Alert on high)

The following table describes the High Settings.

High glucose setting	Description
High limit	Your high limit is the value on which your other high settings are based. Your high limit can be set from 5.6 mmol/L to 22.2 mmol/L. You can set up to eight high limits for different time segments throughout the day or night.
Alert before high	When Alert before high is on, you will receive an alert any time the sensor glucose is predicted to reach the high limit. This makes you aware of potential highs before they occur.
Time before high	Time before high is only available when using Alert before high. Time before high determines when you will receive an Alert before high. You can set a time between 5 and 30 minutes.
Alert on high	When Alert on high is on, your system alerts you when your SG reading reaches or exceeds your High Limit.
Rise Alert	The Rise Alert notifies you when your glucose is rising rapidly. This alert helps you understand how much your glucose levels are affected by meals or, for example, when forgetting to give a bolus.
Rise Limit	The Rise Limit determines when you will receive a Rise Alert. Rise Limit is only available when using Rise Alert.

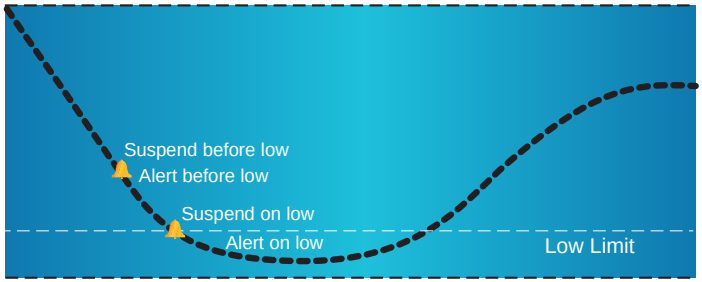
To set up your high settings, see *Setting up the High Settings, on page 167*.

RELEASED

Low settings

The low settings allow you to be alerted and/or have insulin delivery suspended when you are either approaching or have reached your low limit. This is done by using alerts and the SmartGuard feature described on *page 152*.

The following graph shows the different low settings you can use:



WARNING: SmartGuard suspend by sensor features are not intended to be a treatment for low blood glucose. Having insulin suspended when glucose is low may not bring your blood glucose back to your target range for several hours. Always confirm your blood glucose readings with your BG meter and treat according to the recommendations of your healthcare professional.

The following sections describe the SmartGuard feature and the low settings. For details on setting up SmartGuard and your low settings, see *Setting up the Low Settings, on page 171*.

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Low limit

The low limit is the value on which the other low settings are based. The low limit can be set from 2.8 mmol/L to 5.0 mmol/L. You can set up to eight low limits for different periods of the day or night.

Suspend before low

The Suspend before low feature stops insulin delivery when your sensor glucose values are approaching your low limit. This feature is intended to suspend insulin delivery to minimize the amount of time spent low.

The default setting for the Suspend before low feature is off. Consult your healthcare professional for the Suspend before low setting that is best for you.

If you turn on Suspend before low, then Alert on low is automatically turned on. You also have the option to turn on Alert before low.

- If Alert before low is on, your pump alerts you when insulin delivery is suspended. For details, see *Alert before low, on page 161*.

- If Alert before low is off, then Suspend before low appears on the screen, but the pump will not beep or vibrate when insulin delivery is suspended.

WARNING: The Suspend before low feature uses the sensor glucose value, not your blood glucose value to automatically suspend insulin delivery. Your pump automatically suspends insulin delivery when your sensor glucose is approaching the low limit. However your blood glucose reading may be higher than the sensor glucose value. This could result in hyperglycemia. Likewise, your pump may not suspend insulin delivery because your sensor glucose is not approaching the low limit. However, your blood glucose may be lower than the sensor glucose value. This could result in hypoglycemia. Always check your blood glucose and treat as appropriate.

Suspend before low conditions

When a Suspend before low event occurs, all insulin delivery is suspended. For a Suspend before low event to occur, both of these must happen:

- Your SG value is at or within 3.9 mmol/L above your low limit.
- Your SG is predicted to reach or fall below a level that is 1.1 mmol/L above your low limit within approximately 30 minutes.

RELEASED

Responding to a Suspend before low event

When you clear the Suspend before low alert, the SmartGuard suspend by sensor icon flashes and "Suspended before low" appears on your Home screen. If your SG reaches your low limit, an Alert on low occurs.

When a Suspend before low event occurs, insulin delivery will remain suspended for at least 30 minutes, unless you manually resume your basal delivery. For details, see *Manually resuming basal delivery during a suspend by sensor event, on page 174*. After the minimum 30-minute suspend time, basal insulin delivery will automatically resume if the following conditions are met:

- Your SG is at least 1.1 mmol/L above your low limit.
- Your SG is estimated to be more than 2.2 mmol/L above your low limit within 30 minutes.

Your basal insulin delivery will be suspended for a maximum of two hours, unless these criteria are met during the suspend or unless you manually resume your basal insulin. For details, see *Manually resuming basal delivery during a suspend by sensor event, on page 174*.

If you do not respond to the Suspend before low alert, your pump resumes insulin delivery after two hours and displays a Basal delivery resumed alert.

When Suspend before low is unavailable

After a Suspend before low event occurs, there is a period of time when the Suspend before low functionality is unavailable. This time will vary depending on whether or not you respond to the Suspend before low event. You can manually suspend your insulin delivery at any time. For details, see *Stopping and resuming your insulin delivery, on page 54*.

Note: The maximum amount of time the Suspend before low feature will be unavailable is four hours.

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When the SmartGuard suspend by sensor features are unavailable, the SmartGuard suspend by sensor icon on the Home screen appears gray .

When a Suspend before low event occurs and you respond within two hours and:

- Stay suspended for the two hour maximum suspend time, the SmartGuard suspend by sensor features will be unavailable for 30 minutes after your basal insulin delivery resumes.
- Your insulin automatically resumes due to your rising SG levels, the SmartGuard suspend by sensor features will be unavailable for 30 minutes after your basal insulin delivery resumes.
- Manually resume your basal insulin delivery, the SmartGuard suspend by sensor features will be unavailable for 30 minutes after your basal insulin delivery resumes.

If your pump has been suspended for two hours and you have not responded, basal insulin delivery automatically resumes.

If you respond within 30 minutes of basal insulin delivery being resumed, the SmartGuard suspend by sensor features will be unavailable for a total of 30 minutes. For example:

- If you respond 10 minutes after your basal insulin delivery resumes, the SmartGuard suspend by sensor features will be unavailable for an additional 20 minutes.
- If you respond 20 minutes after your basal insulin delivery resumes, the SmartGuard suspend by sensor features will be unavailable for an additional 10 minutes.

If you respond 30 minutes to four hours after your basal insulin delivery resumes, the SmartGuard suspend by sensor features will be available immediately.

If you do not respond, the SmartGuard suspend by sensor features will be unavailable for four hours after basal delivery resumes.

Alert before low

When Alert before low is on, you will receive an alert when you are approaching your low limit. This makes you aware of potential lows before they occur.

The Alert before low feature can be used with the Suspend before low and Suspend on low features. The Alert before low feature works as follows:

- if Alert before low is on, and both suspend by sensor features are off, you receive the Alert before low 30 minutes before you reach your low limit.
- If Suspend on low is on, and Alert before low is on, you receive an Alert before low 30 minutes before you reach your low limit.
- If Suspend before low is on, and Alert before low is on, you receive a Suspend before low alert when insulin delivery is suspended. For details, see *Suspend before low, on page 158*.

You can also choose to have the Alert before low off.

Suspend on low

The Suspend on low feature stops insulin delivery when your sensor glucose value reaches or falls below the low limit that you set. When a Suspend on low event occurs, all insulin delivery is suspended. This feature is used for situations when you cannot respond to a low glucose condition. It is intended to suspend insulin delivery and minimize the amount of time spent low.

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The default setting for the Suspend on low feature is off. Consult your healthcare professional for the Suspend on low setting that is best for you.

If you turn on Suspend on low, then Alert on low is turned on automatically. For more information, see *Alert on low, on page 164*.

WARNING: The Suspend on low feature uses the sensor glucose value, not your blood glucose value, to automatically suspend your pump. Your pump may automatically suspend when your sensor glucose is at or below the low limit, while your blood glucose is above that limit. This could result in hyperglycemia. Likewise, your pump may not suspend even though your blood glucose is at or below the low limit. This could result in hypoglycemia. Always check your blood glucose and treat as appropriate.

Responding to a Suspend on low event

When you clear the Suspend on low alarm, the SmartGuard suspend by sensor icon flashes and "Suspended on low" appears on your Home screen.

When a Suspend on low event occurs, the pump alerts you.

When a Suspend on low event occurs, insulin delivery remains suspended for at least 30 minutes, unless you manually resume your basal delivery. For details, see *Manually resuming basal delivery during a suspend by sensor event, on page 174*. After the minimum 30-minute suspend time, basal insulin delivery will automatically resume if the following conditions are met:

- Your SG is at least 1.1 mmol/L above your low limit.
- Your SG is estimated to be more than 2.2 mmol/L above your low limit within 30 minutes.

Your basal insulin delivery will be suspended for a maximum of two hours, unless these criteria are met during the suspend or unless you manually resume your basal insulin. For details, see *Manually resuming basal delivery during a suspend by sensor event, on page 174*.

If you do not respond to the Suspend on low alarm, your pump resumes insulin delivery after two hours and continues to display an emergency message.

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When Suspend on low is unavailable

After a Suspend on low event occurs, there is a period of time when the suspend functionality is unavailable. This time will vary depending on whether or not you respond to the Suspend on low event. You can manually suspend insulin delivery at any time. For details, see *Stopping and resuming your insulin delivery, on page 54*.

Note: The maximum amount of time the Suspend on low feature will be unavailable is four hours.

When the SmartGuard suspend by sensor features are unavailable, the SmartGuard suspend by sensor icon on the Home screen appears gray .

When a Suspend on low event occurs and you respond within two hours and

- Stay suspended for the two hour maximum suspend time, the SmartGuard suspend by sensor features will be unavailable for 30 minutes after your basal insulin delivery resumes.
- Your insulin automatically resumes due to your rising SG levels, the SmartGuard suspend by sensor features will be unavailable for 30 minutes after your basal insulin delivery resumes.
- Manually resume your basal insulin delivery, the SmartGuard suspend by sensor features will be unavailable for 30 minutes after your basal insulin delivery resumes.

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If your pump has been suspended for two hours and you have not responded, basal insulin delivery automatically resumes.

If you respond within 30 minutes of basal insulin delivery being resumed, the SmartGuard suspend by sensor features will be unavailable for a total of 30 minutes. For example:

- If you respond 10 minutes after your basal insulin delivery resumes, the SmartGuard suspend by sensor features will be unavailable for an additional 20 minutes.
- If you respond 20 minutes after your basal insulin delivery resumes, the SmartGuard suspend by sensor features will be unavailable for an additional 10 minutes.

If you respond 30 minutes to four hours after your basal insulin delivery resumes, the SmartGuard suspend by sensor features will be available immediately.

If you do not respond, the SmartGuard suspend by sensor features will be unavailable for four hours after basal delivery resumes.

Alert on low

The Alert on low feature is automatically turned on when either the Suspend before low feature or the Suspend on low feature is turned on.

When Alert on low is set to on, you receive an alert when your SG reading reaches or falls below your low limit. If your pump is suspended and you have not responded, an emergency message appears.

Automatically resuming basal delivery after a SmartGuard suspend by sensor event

In addition to suspending insulin delivery, the pump can also automatically resume delivery of basal insulin. If insulin has been suspended by either the Suspend before low or the Suspend on low feature, insulin delivery will automatically be resumed if either of the following conditions are met:

- if insulin has been suspended for a minimum of 30 minutes and SG values are at least 1.1 mmol/L above the low limit and expected to be more than 2.2 mmol/L above the low limit in 30 minutes.
- after a maximum of two hours.

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Resume basal alert

When the Resume basal alert is on, you will be alerted when insulin is automatically resumed. If the Resume basal alert is off, basal insulin resumes, but you do not receive an alert. However, you will get a message indicating that the basal has automatically resumed.

If basal resumes after the maximum suspend time of two hours, you will be alerted even if the Resume basal alert is set to off. It is important that you check your BG and ensure your glucose is at a safe level.

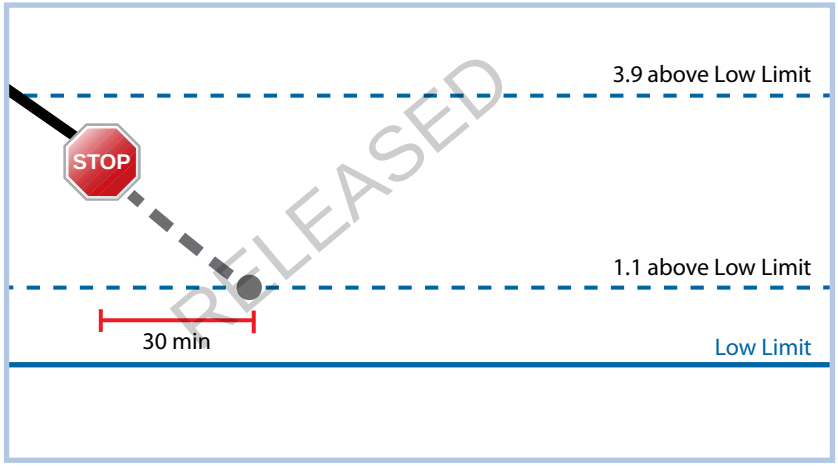
For details on setting up the Resume basal alert, see *Setting up the Low Settings, on page 171*.

SmartGuard suspend by sensor examples

The following examples describe several scenarios that illustrate different types of suspend events, user actions in response to these events, and what happens to insulin delivery in each case.

Example 1: Suspend before low, non-responsive, auto resume basal (trending upwards)

Sarah has been experiencing low sensor glucose values. Her healthcare professional has recommended she use the Suspend before low feature. While at a concert, Sarah's sensor glucose values are approaching her low limit. Her pump recognizes that her glucose will be at or within 1.1 mmol/L above her low limit within 30 minutes and suspends her insulin. Sarah has her Alert before low set to off so that she is not alerted when this occurs.



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An hour later, her sensor glucose values are 1.2 mmol/L above her low limit. Her pump estimates her sensor glucose values will be 2.4 mmol/L above her low limit within 30 minutes. Her pump automatically resumes her basal insulin delivery.

When the concert ends, Sarah sees that her pump automatically suspended and resumed her insulin delivery and a potential low was avoided. She clears the messages by selecting OK.

Example 2: Suspend before low, responsive, manually resume basal

Kate decides to meet her friends at the mall. While shopping, she gets a Suspend before low alert. This indicates that her sensor glucose values are approaching the low limit she has set. She clears the alert and sees that her insulin has been suspended. Kate checks her BG to confirm. Based on her healthcare professional's recommendation, Kate stops for a snack to help avoid hypoglycemia. Knowing the carbohydrate will make her glucose rise, Kate manually resumes her basal insulin delivery by selecting Suspended before low from the Home screen and choosing Resume basal.

Kate knows that after she has manually resumed her basal insulin delivery, the suspend functions will be unavailable for 30 minutes. However, she will be alerted if she reaches her low limit.

Example 3: Suspend before low, responsive, stays suspended

Doug has just finished his evening jog on the beach. As he is walking home, he receives a Suspend before low alert. He sees that his pump has automatically suspended his insulin delivery. Doug clears the alert by selecting OK on his pump. He knows that his pump is now suspended and insulin delivery has been stopped. He checks his BG to confirm and keeps his insulin suspended.

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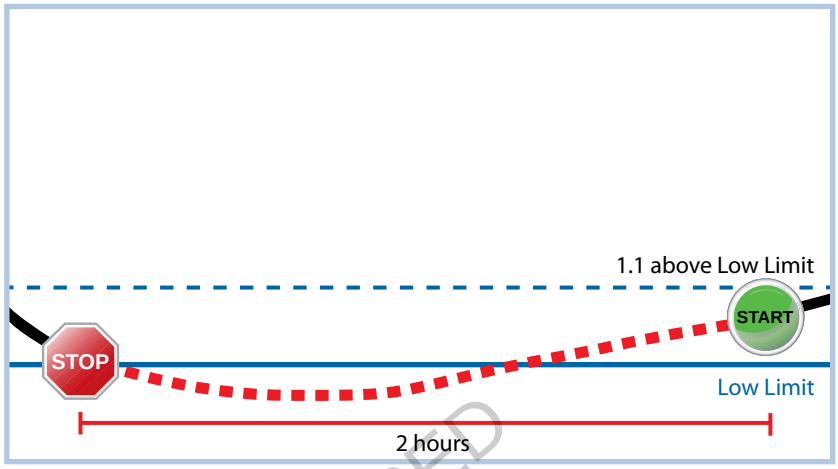
A while later, Doug receives another alert. He looks at his pump and sees that he has received an Alert on low. His SG has reached his low limit. He clears the alert and checks his BG to confirm. He eats carbohydrates to treat the low glucose as instructed by his healthcare professional.

Doug keeps his insulin suspended as directed by his healthcare professional. He knows that once his SG is above his low limit and trending upward, or reaches the maximum suspend time of two hours, basal insulin delivery will automatically resume.

Example 4: Suspend on low, response after basal delivery resumes

Michael is on his college hockey team. He played in a hockey tournament all day and is so exhausted that he falls asleep watching television. His sensor glucose value begins to drop. When his sensor glucose value reaches his low limit, the pump begins to alarm. It automatically suspends all insulin delivery. Michael does not respond to the alarm. After ten minutes, his pump begins to siren and displays the emergency message.

About three hours later, Michael's roommate comes home. He hears the pump sirening and wakes up Michael. Michael clears any messages by selecting OK. He sees that his basal insulin was suspended for the two hour maximum and had automatically been resumed. He checks his blood sugar and sees that it is within the target range.



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Since Michael has responded to his alert, the pump will suspend insulin delivery and alarm again if his sensor value reaches or falls below his low limit again.

Turning on the Sensor feature

You must turn on the Sensor feature before you can set up your glucose alerts and start monitoring your sensor glucose.

To turn on the Sensor feature:

1. Go to the Sensor Settings screen.

   Menu > Sensor Settings

2. Select **Sensor** to turn on the sensor feature. The sensor settings become accessible.

Setting up the High Settings

The steps below guide you through setting up your high settings. For details on your high settings, see *High settings, on page 156*.

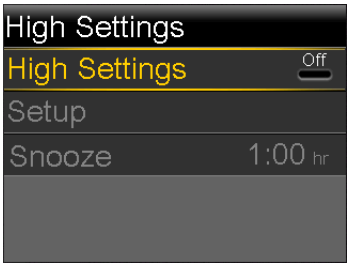
Note: When you enter your settings, you first define the time segment, and then select the high settings you want on during that time segment.

To set up the High Settings:

1. Go to the High Settings screen.

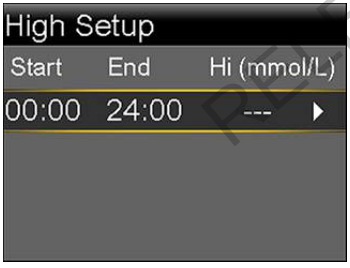
   Menu > Sensor Settings > High Settings

   The High Settings screen appears.



2. Select **High Settings** to turn on the feature.

   The High Setup screen appears.



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3. Select the time segment. The End time starts flashing.

   The Start time of the first time segment is always 00:00. You can set up to eight time segments, each with a different high limit. If you set more than one time segment, the time segments must cover a 24-hour period.

4. Set the End time.
5. Set your Hi limit. You can enter a value from 5.6 to 22.2 mmol/L, in increments of 0.2 mmol/L.
6. Select the arrow to the right of the End time to select the high settings for this time segment.

A screen appears showing the high alerts for the selected time segment.

7. Set the following alerts as desired:

   a. Select **Alert before high** if you want to receive an alert before you reach your high limit.

   b. If you turned on Alert before high, enter the **Time before high** to set how soon you want to be alerted before reaching your high limit. You can enter a value from 5 to 30 minutes.

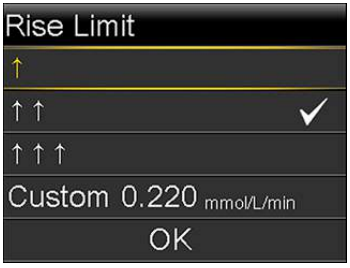
   c. Select **Alert on high** if you want an alert when you reach your high limit.

   d. Select **Rise Alert** if you want to receive an alert when your SG is rising quickly.

      Skip to step 11 if you do not select Rise Alert.

8. If you turned on the Rise Alert, you need to set the Rise Limit. Scroll down and select **Rise Limit** to access this option.

   The Rise Limit screen appears.



9. Select the arrow option (one, two, or three arrows) that corresponds to the rise rate you want to use. To use a custom rate, skip to the next step.

   - Select ↑ for an alert when your SG has been rising at a rate of 0.056 mmol/L per minute or more.

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- Select ↑↑ for an alert when your SG has been rising at a rate of 0.111 mmol/L per minute or more.
- Select ↑↑↑ for an alert when your SG has been rising at a rate of 0.167 mmol/L per minute or more.

Select **OK**, and skip to step 11.

Note: These arrows appear on your Home screen to let you know the rate at which your SG has been rising.

10. To enter a custom rise limit, do the following:
    a. Select **Custom**. The Custom Limit screen appears.
    b. Select **Rise Limit** and set a rise rate from 0.050 to 0.275 mmol/L/min. You set the rate in 0.005 mmol/L/min increments.
    c. Select **OK** to return to the Rise Limit screen and then select **OK** again to confirm your settings.
11. When you have set all the high settings for the selected time segment, select **Next** to continue.
12. If you entered an End time of anything other than 00:00, another time segment appears. When you are finished entering high settings, select **Done**.
13. Review your settings, and select **Save**.

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To change your High Settings:

1. Go to the High Settings screen.

   Menu > Sensor Settings > High Settings

   The High Settings screen appears.
2. Select **Setup**.
3. Select **Edit**.
4. Select and, if needed, adjust the time segment you would like to change.
5. Select any alert setting to turn it on or off or to adjust the setting.
6. Select **Next**.
7. Select **Done**.

8. Review your settings, and select **Save**.

High Snooze

High Snooze is available once you have set your High Settings. High Snooze allows you to set the amount of time that you want to wait before you are reminded that an alert condition still exists. After a high alert is received and cleared, you will be alerted again only if the high alert condition still exists after the snooze time you have set.

Setting the High Snooze:

1. Go to the High Settings screen.

   Menu > Sensor Settings > High Settings

   The High Settings screen appears.

2. Select **Snooze** and enter a value from 5 minutes to 3 hours, in 5 minute increments.

RELEASED

Setting up the Low Settings

The steps below guide you through setting up the Low Settings. For details on the Low Settings, see *Low settings, on page 157*.

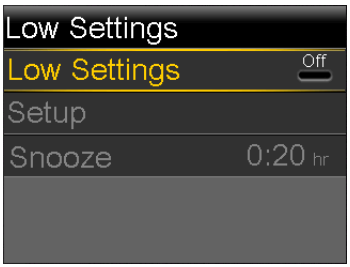
Note: When you enter your settings, you first define the time segment, and then select the low settings you want on during that time segment.

To set up the Low Settings:

1. Go to the Low Settings screen.

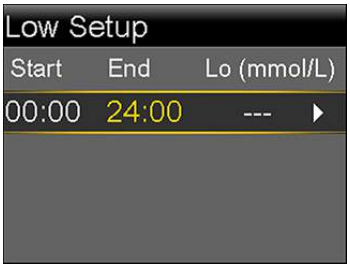
   Menu > Sensor Settings > Low Settings

   The Low Settings screen appears.



2. Select **Low Settings** to turn on the feature.

   The Low Setup screen appears.



3. Select the time segment. The End time starts flashing.

   The Start time of the first time segment is always 00:00. You can set up to eight time segments, each with a different low limit. If you set more than one time segment, the time segments must cover a 24-hour period.

4. Set the End time.

5. Set your low limit. You can enter a value from 2.8 to 5.0 mmol/L, in increments of 0.2 mmol/L.

6. Select the arrow to the right of the End time to select the low settings for this time segment.

   A screen appears showing the available settings for the selected time period.

7. Set the following as desired:

   a. Select **Suspend before low** to have insulin suspended before you reach your low limit. The Alert on low alert is automatically turned on and cannot be turned off.

   b. Select **Alert before low** to receive an alert before you reach your low limit. If Suspend before low is also on, you are alerted when insulin is suspended.

RELEASED

c. Select **Suspend on low** to have insulin suspended when you reach or fall below your low limit. The Alert on low alert is automatically turned on and cannot be turned off.

d. Select **Alert on low** if you want to receive an alert when your SG reaches or falls below your low limit. If either suspend feature is on, this will already be on.

e. Select **Resume basal alert** if you want an alert when basal insulin delivery is resumed based on SG values during a suspend by sensor event. If you do not turn on the alert, the Basal delivery resumed message will still appear on the pump, but you will not be alerted.

Note: When setting your low alerts:

- If you turn on the Suspend before low or the Suspend on low feature, then the Alert on low feature is turned on automatically.
- Only one suspend by sensor feature can be used during each time segment. You cannot use both the Suspend before low and the Suspend on low features in the same time segment.

RELEASED

8. If you entered an End time of anything other than 00:00, another time segment appears.

   When you are done entering your low settings, select **Done**.

9. Review your settings, and select **Save**.

To make changes to your Low Settings:

1. Go to the Low Settings screen.

   Menu > Sensor Settings > Low Settings

   The Low Settings screen appears.

2. Select **Setup**.
3. Select **Edit**.
4. Select, and if needed, adjust the time segment you would like to change.

5. Select any alert setting to turn it on or off or to adjust the setting.
6. Select **Next**.
7. Select **Done**.
8. Review your settings, and select **Save**.

Low Snooze

Low Snooze is available once you have set your Low Settings. Low Snooze allows you to set the amount of time that you want to wait before you are reminded that an alert condition still exists. After a low alert is received and cleared, you will be alerted again only if the low alert condition still exists after the snooze time you have set.

Setting the Low Snooze:

1. Go to the Low Settings screen.

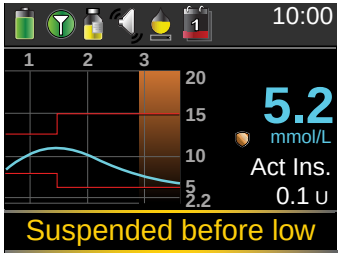
   Menu > Sensor Settings > Low Settings

   The Low Settings screen appears.
2. Select **Snooze** and enter a time between 5 minutes and 1 hour.

RELEASED

Manually resuming basal delivery during a suspend by sensor event

When your pump suspends insulin due to a Suspend before low or Suspend on low event, the bottom of your Home screen displays either Suspended before low or Suspended on low depending on which is active.



If you do not want to wait for your pump to automatically resume your basal insulin, you can follow the procedure below to manually resume your basal delivery.

To manually resume basal delivery:

1. From the Home screen, select **Suspended before low** or **Suspended on low**.

   The SmartGuard screen appears.

2. Select **Resume Basal**.

3. Select **Yes** to resume basal delivery.

Note: Always remember to promptly respond to any confirmation messages shown on the pump screen. Your prompt response is needed to complete the task.

Wirelessly connecting your pump and transmitter using Auto Connect

Before you can start using your sensor, you must first wirelessly connect your pump to your transmitter so they can begin communicating with each other.

The Auto Connect process locates your transmitter without having to enter the serial number of the transmitter into your pump manually.

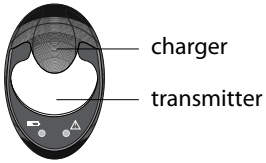
Note the following before trying to connect your pump and transmitter:

- You can connect only one transmitter to your pump. If you already have a transmitter connected to your pump, you must delete it before continuing. For instructions on deleting a transmitter from your pump, see *Deleting the transmitter from your pump, on page 181*.
- Ensure that you are not close to other Medtronic devices that are in search mode before using Auto Connect. (For example, if another household member is connecting a BG meter or transmitter to his or her insulin pump.) If you know multiple people are connecting devices, such as in a training class, use the Manual Connect process on *page 179*.

Connecting your pump and transmitter using Auto Connect:

1. Attach your transmitter to the charger and make sure the transmitter is fully charged. Keep your transmitter attached to the charger.

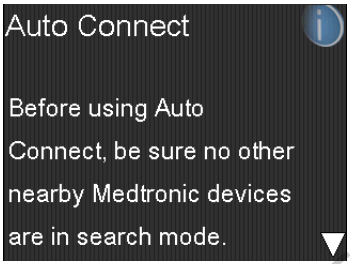
RELEASED



Note: Both lights on the charger are off when the transmitter is fully charged. For more information, see your transmitter user guide.

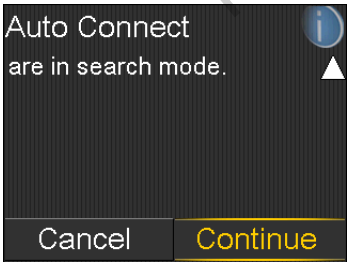
2. Go to the Auto Connect screen.

   Menu > Utilities > Device Options > Connect Device > Auto Connect



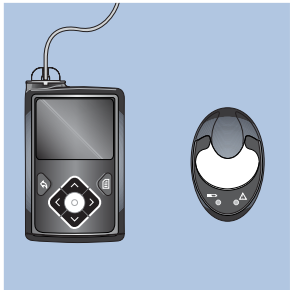
RELEASED

3. Make sure there are no other devices in search mode nearby, scroll down to the bottom of the Auto Connect screen, and select **Continue**.



   The New Device screen appears.

4. Place the transmitter (still attached to the charger) next to the pump.



5. Select **Search** on your pump and immediately remove the transmitter from the charger.

RELEASED

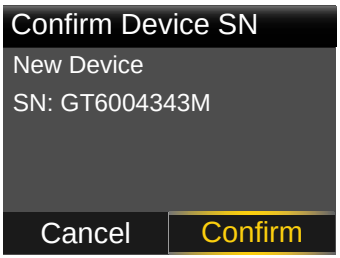
The following happens when you start the search process:

- On your pump, a message appears to let you know your pump is searching.
- On your transmitter, a green light flashes briefly and then turns off.

Note: The search process can take up to two minutes. You cannot access your pump screens or suspend your pump during the search process.

When your pump finds the transmitter, the Confirm Device SN screen appears.

6. Ensure the transmitter serial number on your pump screen matches the serial number on the back of your transmitter and then select **Confirm**.



If the connection is successful, your pump displays a success message. If the Sensor feature is turned on, the Connection icon appears on the status bar.

If your pump does not find your transmitter, see the following procedure, *If your pump does not find your transmitter*. If your pump finds multiple devices, skip to the steps on *page 178*.

If your pump does not find your transmitter:

1. Place the transmitter back on the charger and make sure your transmitter is fully charged before continuing.
2. Place your pump and transmitter within an arm's length of each other.
3. Select **Retry** on your pump and immediately remove the transmitter from the charger to start the search process.
4. If the search is unsuccessful the second time, select **Cancel** when the No Devices Found message appears and then follow the instructions in *Wirelessly connecting your pump and transmitter using Manual Connect, on page 179*.

If your pump found multiple devices:

1. Write down the serial number for your transmitter. The serial number can be found on the back of your transmitter.
2. Place the transmitter back on the charger and make sure your transmitter is fully charged before continuing.
3. Select **Next** from the Multiple Devices Found message to display the Enter Device SN screen.
4. Manually enter your device serial number by following the instructions, starting with step 4 in *Wirelessly connecting your pump and transmitter using Manual Connect, on page 179*.

RELEASED

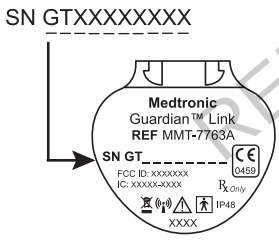
Wirelessly connecting your pump and transmitter using Manual Connect

The Manual Connect process requires you to enter the serial number of the transmitter into your pump. Use this process if you are unsuccessful using the Auto Connect process, or when multiple people in close range are connecting their pumps with other devices, such as a group training session.

Note: You can connect only one transmitter to your pump. If you already have a transmitter connected to your pump, you must delete it before continuing. For instructions on deleting a transmitter from your pump, see *Deleting the transmitter from your pump, on page 181*.

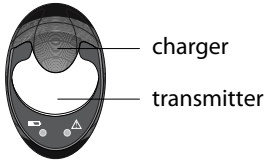
Connecting your pump and transmitter using Manual Connect:

1. You need the serial number for your transmitter during the connection process. Write down the serial number in the following space provided.

Find your serial number here:	Write it here:
	Write your serial number here, include any letters: SN GT __ __ __ __ __ __ __ __

RELEASED

2. Attach your transmitter to the charger, and make sure the transmitter is fully charged. Keep your transmitter attached to the charger.



Note: Both lights on the charger are off when the transmitter is fully charged. For more information, see your transmitter user guide.

If you remove the transmitter from the charger to write down the serial number, the green charger light may start flashing when you attach the transmitter to the charger again. You can continue the connection process without waiting for the charger light to stop flashing.

3. On the pump, go to the Enter Device SN screen.

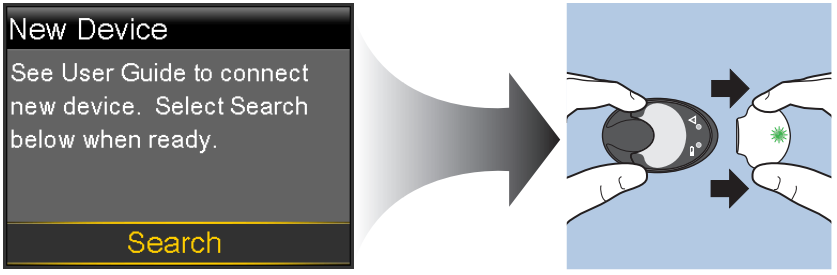
   Menu > Utilities > Device Options > Connect Device > Manual Connect

RELEASED

4. Use the pump navigation buttons to enter the serial number of the transmitter and select **OK**.

   The New Device screen appears.

5. Select **Search** on your pump and immediately remove the transmitter from the charger.



The following happens when you start the search process:

- On your pump, a message appears to let you know your pump is searching.

- On your transmitter, a green light flashes briefly and then turns off.

> **Note:** The search process can take up to two minutes. You cannot access your pump screens or suspend your pump during the search process.

6. Place the transmitter next to the pump.

   If the connection is successful, your pump displays a success message. If the Sensor feature is turned on, the Connection icon appears on the status bar.

If your pump does not connect to your transmitter:

1. If your pump does not connect to the transmitter, do one of the following:
   - Select **Retry** to return to the Enter Device SN screen on your pump, and then return to step 4 of the procedure above and follow the instructions to search again.
   - Select **Cancel** to return to the Connect Device screen, where you can search again using Manual Connect or Auto Connect.
2. If you have tried to connect multiple times without success, see *My pump cannot find the sensor signal, on page 234*.

RELEASED

Deleting the transmitter from your pump

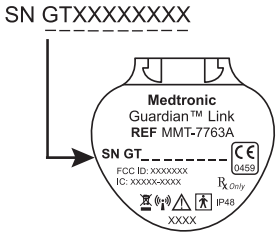
Follow this procedure to delete the transmitter from your pump. Use this process when you are replacing your transmitter.

To delete your transmitter from your pump:

1. Go to the Manage Devices screen.

   Menu > Utilities > Device Options > Manage Devices

2. Identify and select your transmitter by the serial number. The serial number can be found on the back of the transmitter.



3. Select **Delete**.
4. A screen appears confirming that you would like to delete the device. Select **Yes** to confirm or **No** to cancel.

Inserting the sensor

Always refer to the serter user guide for instructions on how to insert the sensor.

Connecting the transmitter to the sensor

Always refer to your transmitter user guide for instructions on connecting the transmitter to the sensor.

RELEASED

Starting the sensor

After you insert your sensor and connect your sensor and transmitter, your pump starts communicating with the transmitter. The pump notifies you when the sensor is ready to use.

To start a new sensor using the Start New Sensor message:

1. Select **Start New Sensor** when it appears on the pump screen.

   The "Sensor warm-up started" message appears.
2. Select **OK**.

   "Warm up..." appears on the Home screen until the sensor is ready for first calibration.

> **Note:** If you do not see the **Start New Sensor** option, then follow the procedure for manual connection described below.

To start a new sensor using manual connect:

1. Go to the Sensor Connections screen.

   Menu > Sensor Settings > Sensor Connections

2. Select **Start New Sensor**.

   The Start New Sensor screen appears.

3. If you have not done so already, connect the transmitter to your sensor. For details about connecting your transmitter and sensor, see your transmitter user guide.

   Your pump searches for your transmitter signal. It can take up to six minutes for your pump and transmitter to start communicating.

4. Select **OK**.

5. The Sensor warm-up started message appears on the screen. Select **OK**.

   "Warm up..." appears on the Home screen until the sensor is ready for first calibration. Your pump begins displaying SG data up to 15 minutes after you successfully calibrate your sensor. For details about calibration, see *Calibrating your sensor, on page 184*.

   If you receive a message that your pump cannot find the sensor signal, continue to the next section.

RELEASED

If your pump cannot find the sensor signal:

1. If your pump cannot find the sensor signal, follow the instructions on your pump screen. Your pump guides you through the following steps:

   a. Disconnect and reconnect the transmitter from the sensor. Pay attention to the transmitter, and notice if the transmitter light blinks when connected to the sensor. If the transmitter light does not blink, you need to charge your transmitter.

   b. Move your pump closer to your transmitter. It can take up to 15 minutes for your pump to find the sensor signal.

   c. If your pump is still unable to find the sensor signal, make sure you are away from any electronic devices that might cause interference.

2. If you have gone through all of the troubleshooting on your pump screen and your pump still cannot find the sensor signal, contact your local help line or representative for assistance.

Calibrating your sensor

Calibration is the process of entering a BG meter reading to calculate sensor glucose values. You must calibrate your sensor regularly to ensure you continue to receive sensor glucose data. For details, see *Guidelines for calibrating, on page 187*.

Within two hours after you use your pump to start the sensor, your pump displays a Calibrate now alert to let you know that a calibration is due. This BG meter reading is the first calibration for your sensor. It takes up to 15 minutes after calibration to see the first sensor glucose reading on your Home screen. You enter your second calibration within six hours after your first calibration.

After you have entered your first two calibrations, you must calibrate your sensor again within 12 hours. If you do not enter a BG meter reading within 12 hours, your pump displays the Calibrate now alert and stops calculating sensor glucose values until a calibration BG is successfully entered. The sensor must be calibrated at a minimum of every 12 hours throughout the life of the sensor.

If you are using a compatible Bayer meter, you can set up your pump to calibrate automatically with each valid BG meter reading. For more details, see *Setting up Auto Calibration, on page 185*.

RELEASED

Note: Sensor calibration is successful only if your BG entry is in the range of 2.2 to 22.2 mmol/L. Remember to calibrate three to four times throughout the day for optimal results.

To calibrate your sensor:

1. Take a BG meter reading.
2. Go to the Calibrate Sensor screen.

   Menu > **Sensor Settings** > **Calibrate Sensor**
3. Select **BG** and enter the value.
4. Select **Calibrate**.

You can set up a reminder to notify you when your next calibration is due. For more information, see *Calibration reminders, on page 133*.

Setting up Auto Calibration

The Auto Calibration feature determines how to calibrate the pump when using a wirelessly linked compatible Bayer meter. When the Auto Calibration feature is turned on, the pump uses any BG value in the range of 2.2 to 22.2 mmol/L for calibration. When this feature is turned off, the pump asks you every time if you want to use the compatible Bayer meter for calibration.

To turn on Auto Calibration:

1. Go to the Auto Calibration screen.

   Menu > Sensor Settings > Auto Calibration

2. Select **Auto Calibration** to turn on the feature.
3. Select **Save**.

Note: If you decide not to use the Auto Calibration in the future, select **Auto Calibration** to turn off the feature.

RELEASED

Where to enter your calibration BG meter reading

There are several screens on the pump where you can enter a BG meter reading for calibration. These screens are described in the following table. These options are available only if you are using a sensor, and your transmitter is wirelessly connected with your pump.

Note: If you are using a compatible Bayer meter and want to calibrate using every valid BG meter reading sent to your pump, you can use the Auto Calibration feature. For details about Auto Calibration, see *Setting up Auto Calibration, on page 185*.

Pump screen	How to enter your calibration BG
Home screen When the calibration option is available, you can access the Calibrate Sensor screen. First highlight the sensor graph on the Home screen. Then press and hold the ○ button to access the calibration screen.	Enter a BG meter reading specifically for calibration.
Calibrate Sensor screen **Menu > Sensor Settings > Calibrate Sensor**	Enter a BG meter reading specifically for calibration.
BG Meter screen The BG Meter screen appears automatically when your compatible Bayer meter sends a BG meter readings to your pump.	Select the Calibrate Sensor option to calibrate your sensor with the current BG meter readings.
BG screen in Event Markers **Menu > Event Markers > BG**	When you enter a BG meter reading in Event Markers, the Event Markers screen has an option to use the BG value for calibration.
BG field in the Bolus Wizard screen **Home screen > Bolus > Bolus Wizard**	When you enter a BG meter reading to deliver a bolus using the Bolus Wizard, the Bolus Wizard gives you the option to use the BG value for calibration after the bolus is delivered.

RELEASED

When to calibrate

The following table describes when to calibrate your sensor.

Calibrate	Description
After warm-up is complete.	Do your first sensor calibration. Your pump displays a Calibrate now alert within two hours after starting a new sensor. Your first sensor glucose reading appears about 5 to 15 minutes after you calibrate.

Calibrate	Description
Six hours after your first calibration.	Do your second sensor calibration. Six hours after you calibrate for the first time, a Calibrate now alert appears, and your pump stops calculating your SG values. It takes about 5 to 15 minutes after you calibrate to receive SG values again.
Within 12 hours after your second calibration and at least every 12 hours thereafter.	After you do your second calibration, you need to calibrate at least every 12 hours. If you do not calibrate for more than 12 hours, a Calibrate now alert appears. It takes about 5 to 15 minutes after you calibrate to receive SG values again.

Guidelines for calibrating

Follow these guidelines for best sensor calibration results:

- Calibrate three to four times spread out throughout the day to improve accuracy. For details, see *When to calibrate, on page 186*.
- You can calibrate anytime. However, calibrating with two or three trend arrows may temporarily decrease accuracy until the next calibration. For an example of trend arrows on the Home screen, see *Home screen with CGM, on page 153*.
- Always calibrate immediately after testing your BG. Never calibrate with a BG meter reading that you have taken more than 12 minutes earlier as that BG value would no longer be considered valid.
- Always use clean, dry fingers when you test your blood glucose levels.
- Use only your fingertips when obtaining blood samples for calibration.

RELEASED

Note: If your BG meter readings are significantly different than your sensor glucose readings, you need to wash your hands and calibrate again.

Disconnecting the transmitter from the sensor

Always refer to your transmitter user guide for instructions on disconnecting the transmitter from the sensor.

Removing the sensor

Always refer to the sensor user guide for instructions on how to remove the sensor.

Turning off Sensor Settings

You can turn off Sensor Settings at any time. If you disconnect the transmitter from the sensor, turn off the Sensor Settings to avoid getting a sensor alert. Your sensor settings remain in your pump. You cannot make changes to the settings until you turn on the Sensor Settings again.

To turn off Sensor Settings:

1. Go to the Sensor Settings screen.

   Menu > **Sensor Settings**
2. Select **Sensor**.
3. Select **Yes** to turn off the sensor feature.

RELEASED

11

using continuous glucose monitoring

RELEASED

RELEASED

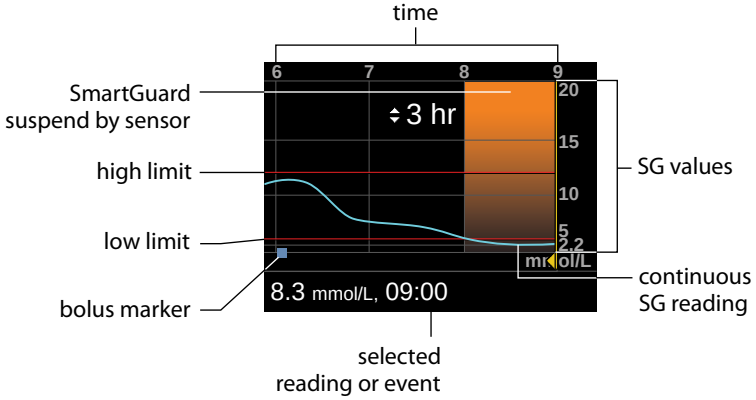
11 Using continuous glucose monitoring

This chapter provides information on how to use CGM on your pump and view your sensor glucose data. This information helps you identify sensor glucose trends, including being notified if your sensor glucose is falling or rising rapidly. You can also view historical sensor glucose readings in a graph format. Information is also included on how to silence your glucose alerts.

RELEASED

The sensor graph

The sensor graph displays your current sensor glucose (SG) reading that is wirelessly sent to your pump by the transmitter.



The sensor graph includes the following information:

- The most recent sensor glucose reading

- Historical sensor glucose readings for the last 3-hour, 6-hour, 12-hour, or 24-hour periods
- Your high and low glucose alert limit
- The bolus deliveries you have given during the time period shown on the graph
- Any suspend events that have occurred

If an SG reading does not appear on the graph, some possible reasons for this include:

- An error condition or a sensor-related alert is occurring.
- A new sensor that you just inserted is still initializing.
- A new sensor that just initialized is still calibrating.
- An existing sensor that you have recently reconnected is not ready.
- More than six hours have passed since the initial sensor calibration.
- More than 12 hours have passed since the last sensor calibration.

RELEASED

To view the sensor graph:

1. Select the graph area of the Home screen.

   A full-screen view of the 3-hour graph appears.
2. Select ^ to navigate to the 6-hour, 12-hour, and 24-hour graphs.
3. Select < to view SG readings and event details.
4. To exit the full-screen view, press ↩.

Identifying rapid changes in sensor glucose

When you use a sensor, trend arrows appear on the Home screen if your SG has been rising or falling faster than a certain per-minute rate. The number of arrows that appear tell you how quickly your SG has been changing.

The following table shows the trend arrows and their corresponding rates.

↑	SG has been rising at a rate of 0.056 mmol/L per minute or more, but less than 0.111 mmol/L per minute.
↓	SG has been falling at a rate of 0.056 mmol/L per minute or more, but less than 0.111 mmol/L per minute.

↑↑	SG has been rising at a rate of 0.111 mmol/L per minute or more, but less than 0.167 mmol/L per minute.
↓↓	SG has been falling at a rate of 0.111 mmol/L per minute or more, but less than 0.167 mmol/L per minute.
↑↑↑	SG has been rising at a rate of 0.167 mmol/L per minute or more.
↓↓↓	SG has been falling at a rate of 0.167 mmol/L per minute or more.

Silencing Glucose Alerts

The Alert Silence feature allows you to make sensor glucose alerts silent for a set period of time. This is useful in situations where you do not want to disturb others, such as when you are in a business meeting or in a movie theater. When using this feature, your system still records the time and glucose value for any alerts that occur. You can view this information in the Alarm History screen. See *Alarm History, on page 122* for details.

If a glucose alert occurs when you are using the Alert Silence feature, the notification light begins to flash and the Sensor alert occurred message appears letting you know an alert was silenced, but there is no vibration or beep. If you have not cleared the alert by the end of the preset alert silence duration, your pump begins to beep or vibrate periodically until the alert is cleared.

RELEASED

The following table describes the glucose alerts that are silenced with each option.

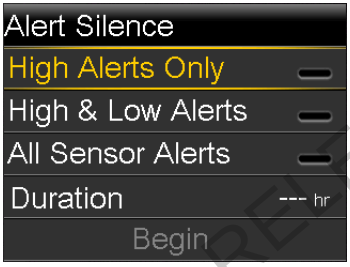
This Alert Silence setting	**Silences these alerts**
High Alerts Only	Alert on high, Alert before high, and Rise Alert
High & Low Alerts	Alert on high, Alert before high, Rise Alert, Alert on low, Alert before low, Suspend before low, and Resume Basal Alert

This Alert Silence setting	Silences these alerts
All Sensor Alerts	All of the alerts listed previously for High & Low Alerts, plus the following: • All calibration alerts, reminders, or error messages • All alerts relating to sensor insertion, including alerts about sensor warm-up, changing your sensor, sensor expiration, sensor errors, connection issues, and so on • All alerts related to your transmitter, including all alerts about your transmitter battery and all connection issues

To silence Glucose alerts:

1. Go to the Alert Silence screen.

   Menu > Sensor Settings > Alert Silence



RELEASED

2. Select **High Alerts Only**, **High & Low Alerts**, or **All Sensor Alerts** to set the alerts you want silenced. Refer to the previous table for details about the alerts silenced with each selection.

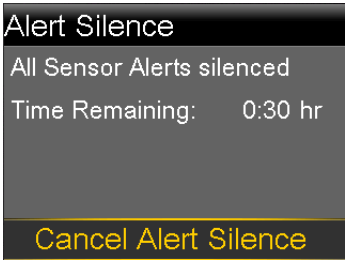
Note: If you select **All Sensor Alerts**, you will not receive any alerts related to your sensor glucose readings, your sensor, calibration requirements, or your transmitter. If a glucose alert occurs, the notification light flashes and a message appears on your pump to let you know a silenced alert occurred, but there is no vibration or beep. You can view the specific alert in Alarm History. For more information, see *Alarm History, on page 122*.

3. Set the **Duration** time (from 30 minutes to 24 hours) for which the alerts will be silenced, and then select **OK**.
4. Select **Begin**. The Alert Silence settings immediately take effect and you are returned to the Sensor Settings screen.

To cancel Alert Silence:

1. Go to the Alert Silence screen.

   Menu > Sensor Settings > Alert Silence



2. Select **Cancel Alert Silence**.

RELEASED

RELEASED

12

alarms, alerts, and messages

RELEASED

RELEASED

12 Alarms, alerts, and messages

This chapter describes the general behavior of the most common and the most serious notifications and how to resolve them.

About alarms, alerts, and messages

Your pump has a sophisticated safety network. If this safety network detects anything unusual, it conveys this information in the form of notifications. Notifications include alarms, alerts, and messages.

RELEASED

Note: When you receive a notification while your pump is locked, you will be able to clear the alarm, alert, or message without having to unlock your pump. After you clear the notification, you will be redirected to the Home screen. You must unlock your pump before navigating away from the Home screen. For more information, see *Unlocking your pump, on page 26*.

When you have received more than one notification and there are multiple messages to view, a small white flap appears on the notification icon in the upper-right corner of the screen . When you clear the first notification, the next notification becomes visible.

Note: It is important that you promptly respond to all notifications and confirmations that appear on your pump. In the event that you do not respond, your pump may remain on that screen until addressed.

When you respond to a message, there may be times when another message appears. Always be sure to address all notifications you have received.

A white triangle in the lower-right corner means you must press ⌄ to continue.

WARNING: If you receive a critical error on your pump, the following screen displays and the pump sirens.

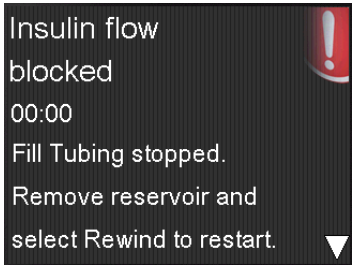
Immediately disconnect from your insulin pump and discontinue use. Contact your local representative for assistance.

Remember, your body still needs insulin while your pump is removed. It is important that you consult your healthcare professional to determine an alternate method of receiving insulin while your pump is removed.

RELEASED

Alarms

An alarm warns you that the pump detected something that prevents insulin from being delivered. It is important that you respond to an alarm.



WARNING: Do not ignore your pump when it has an alarm because all insulin delivery is stopped, which may lead to high blood glucose and ketoacidosis.

When an alarm occurs:

Display: The pump displays a notification with a red icon and instructions.

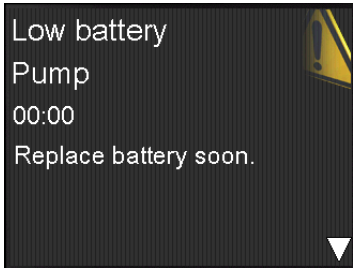
Notification light: The red notification light blinks twice, followed by a pause, in a continuous repeating pattern. The notification light is shown in *Using the buttons, on page 20*.

Audio: Depending on your Audio Options settings, the pump emits an alarm tone, a continuous three-pulse-and-pause vibration pattern, or both the alarm tone and vibration.

You must resolve the underlying problem that triggered the alarm. In most cases, you clear an alarm by pressing ✓ and then you make a selection. In some cases, however, clearing the alarm does not fix the underlying problem. The alarm repeats until the underlying problem is fixed.

If you do not respond to an alarm, after ten minutes the alarm tone escalates to a loud emergency siren. For more information, see *Alarm and alert escalation, on page 247*.

Alerts



An alert makes you aware of a situation that may require your attention. An alert is less serious than an alarm.

When an alert occurs:

Display: The pump displays a notification with a yellow icon and instructions.

Notification light: The red notification light on your pump blinks once, followed by a pause, then blinks once again in a continuous repeating pattern. The notification light is shown in *Using the buttons, on page 20*.

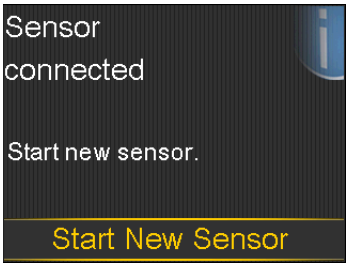
Audio: Depending on your Audio Options settings, the pump either beeps or vibrates in a continuous three-pulse-and-pause pattern, or does both.

To clear an alert, press ✓ and then make a selection. If you do not respond to an alert, the pump beeps every five minutes or every fifteen minutes, depending on the alert. Some alerts will also escalate to a loud emergency siren after ten minutes. For more information, see *Alarm and alert escalation, on page 247*.

RELEASED

Note: If an alert occurs when you are in a screen other than the Home screen, the alert message may appear after you return to the Home screen.

Messages



A message informs you about the status of your pump or if you need to make a decision.

When a message occurs:

Display: The pump displays a notification with a blue icon and instructions.

Notification light: Does not illuminate or blink.

Audio: Depending on the message, the pump emits a message tone, an alert tone, or no tone. Depending on your Audio Options settings, you may hear a tone, feel a one-pulse-only vibration, or hear a tone and feel a vibration.

You clear the message by pressing ✓ and make a selection.

RELEASED

Pump alarms, alerts, and messages

The following table lists the most common or serious alarms, alerts, and messages related to your pump. The table also explains the meaning, consequences, and the reasons why these notifications appear, and provides steps for problem resolution.

Title and text	Explanation	Next steps
Active Insulin cleared Any Active Insulin amount has been cleared.	An alarm has cleared your active insulin amount. Your active insulin amount is now at 0 units.	• Select **OK** to clear the alarm. • The active insulin tracked prior to pump restart is not included in new Bolus Wizard calculations. Consult your healthcare professional for how long you need to wait after active insulin is cleared before you can rely on the active insulin calculation of your Bolus Wizard • You can check Daily History for the time and amount of your last bolus. For more information, see *Daily History, on page 121*.
Auto Suspend Insulin delivery suspended. No buttons pressed within time set in Auto Suspend.	You have not pressed any buttons during the time specified in the Auto Suspend settings.	• To clear the alarm and resume basal insulin delivery, select **Resume Basal**. • Check your BG and treat as necessary.
Battery failed Insert a new AA battery.	The pump battery does not have enough power.	• Select **OK** to clear the alarm. • Remove the old battery and insert a new AA battery. For details, see *About batteries, on page 21*.
Battery not compatible. See User Guide.	The battery that you inserted into the pump is not compatible.	• To clear the alarm, remove the incompatible battery. • Insert a new AA battery. For compatible battery types, see *About batteries, on page 21*.

RELEASED

Title and text	Explanation	Next steps
Bolus not delivered. Bolus entry timed out before delivery. If bolus intended, enter values again.	Bolus values entered, but bolus was not delivered within 30 seconds.	• Select **OK** to clear the alert. • If bolus delivery was intended, check your BG, re-enter bolus values and deliver bolus.
Bolus stopped Cannot resume bolus or cannula fill. XX.XXX of YY.YYY U delivered. ZZ.ZZZ U not delivered. If needed, enter values again.	The battery power was exhausted while a bolus or Fill Cannula was in progress.	• Note the amount of insulin not delivered. • Replace the AA battery. • Select **OK** to clear the alarm. • Deliver the remaining bolus amount if needed.
Cannot connect device This device is incompatible with your pump. See User Guide.	• You may be trying to connect a device that is not compatible with your pump. • You are trying to connect a transmitter to your pump but another transmitter is already wirelessly connected to your pump.	• Select **OK** to clear the alert. • Check the list of devices that are compatible with your pump in *Optional devices, on page 14*. • If you are replacing your transmitter, make sure that you first delete the old transmitter from your pump before you try to connect your new transmitter. Only one transmitter can be connected to your pump. For details, see *Deleting the transmitter from your pump, on page 181*.
Check settings Startup Wizard settings complete. Check and set up your other settings.	Some settings have been cleared or reverted to factory default values.	• Select **OK** to clear the alert. • Review any settings that you have not already set in Startup Wizard and re-enter the values, if necessary.

RELEASED

Title and text	Explanation	Next steps
Critical pump error Delivery stopped. Pump not working properly. Stop using pump. Remove infusion set from body. Consider other insulin treatment. See User Guide.	Your pump has encountered a critical error.	The pump is not able to deliver insulin. Remove your infusion set and stop using your pump. • Consider another form of insulin delivery. • Check your BG, and treat as necessary. • Write down the error code that appears on the alarm screen. • Call your local representative for assistance with your pump.
Delivery limit exceeded Delivery stopped. Check BG. See User Guide for more information.	You have attempted to deliver more insulin than expected based on your Max Bolus and Max Basal settings.	• Check your BG. • Select **Resume Basal**. • Check Bolus History and reevaluate your need for insulin. • Continue to monitor your BG.
Fill Cannula? Select Fill to fill cannula or select Done if not needed.	You had the Fill Cannula screen displayed for 15 minutes.	• To proceed and fill the cannula, select **Fill**. • If you do not need to fill the cannula, select **Done** to skip this process.
Insert battery Delivery stopped. Insert a new battery now.	The battery was removed from the pump.	• Insert a new AA battery. • The alarm clears when you insert a new battery. • The pump powers off after 10 minutes unless you insert a new battery.

RELEASED

Title and text	Explanation	Next steps
Insulin flow blocked Check BG. Consider injection and testing ketones. Change reservoir and infusion set.	Your pump has detected that the basal or bolus insulin flow was blocked.	• Check your blood glucose. Consider checking ketones and take an injection if needed. • Remove your infusion set and reservoir. • Select **Rewind** to start the new reservoir process using a new infusion set and reservoir. If a bolus delivery was in progress when the alarm occurred: • Check the Daily History screen for the amount of bolus already delivered before the pump alarmed. • Consider delivering remaining bolus, if the bolus insulin was not included in an insulin injection.

RELEASED

Title and text	Explanation	Next steps
Insulin flow blocked Check BG. Consider injection and testing ketones. Estimated 0 U insulin in reservoir. Change reservoir and infusion set.	Your pump has detected that the insulin flow was blocked and there is no insulin in the reservoir.	• Check your blood glucose. Consider checking ketones and take an injection if needed. • Remove your infusion set and reservoir. • Select **Rewind** to start the new reservoir process using a new infusion set and reservoir. If a bolus delivery was in progress when the alarm occurred: • Check the Daily History screen for the amount of bolus already delivered before the pump alarmed. • Consider delivering remaining bolus, if the bolus insulin was not included in an insulin injection.

RELEASED

Title and text	Explanation	Next steps
Insulin flow blocked Fill Cannula stopped. Remove infusion set from body. Change reservoir and infusion set.	Your pump has detected the insulin flow was blocked while filling the cannula.	• Check your blood glucose. Consider checking ketones and take an injection if needed. • Remove your infusion set and reservoir. • Select **Rewind** to start the new reservoir process using a new infusion set and reservoir. If a fill cannula was in progress when the alarm occurred: • Check the Daily History screen for the amount of bolus already delivered before the pump alarmed. • Consider delivering remaining bolus, if the bolus insulin was not included in an insulin injection.

RELEASED

Title and text	Explanation	Next steps
Insulin flow blocked Fill Tubing stopped. Remove reservoir and select Rewind to restart.	Your pump has detected the insulin flow was blocked while filling the tubing. Possible connection issue between the tubing and reservoir.	• Remove the reservoir and select **Rewind** to restart the fill tubing process. • Disconnect tubing from reservoir. • Be sure tubing is not crimped or bent. • Continue following the steps displayed on the pump using the same infusion set and reservoir. • If this alarm occurs again, use a new infusion set. If a fill tubing delivery was in progress when the alarm occurred: • Check the Daily History screen for the amount of bolus already delivered before the pump alarmed. • Consider delivering remaining bolus, if the bolus insulin was not included in an insulin injection.
Loading incomplete Remove reservoir and select Rewind to restart loading.	You pressed ↩ after loading began.	• Remove the reservoir to start again. • Select **Rewind** and follow the on-screen instructions.
Low battery Pump Replace battery soon.	The battery in the pump is low on power.	• Select **OK** to clear the alert. • Replace the AA battery as soon as possible. Otherwise, insulin delivery stops, and the Replace Battery Now alarm occurs. • If the pump is delivering a bolus or filling the cannula, wait until delivery is complete to replace battery.

RELEASED

Title and text	Explanation	Next steps
Low reservoir *XX* hours remaining. Change reservoir. or: *XX* units remaining. Change reservoir.	Your reservoir is low on insulin, according to the number of hours or units set in the Low Reservoir Reminder.	• Select **OK** to clear the alert. • Change the reservoir soon. • If you do not change the reservoir after you receive this alert, you will receive a second Low reservoir alert when the insulin level reaches half of your original alert amount. For more details, see *Low Reservoir reminder, on page 132*.
Manage settings error Delivery stopped. Backup settings cleared from Manage Settings. Current settings are working properly. Select **OK** to restart. See User Guide.	A pump error has occurred, and you need to restart your pump. Your backup settings have been lost, but your current settings are unchanged.	• Select **OK** to restart your pump. Your current settings are unchanged. Only your backup settings are lost. • When the pump restarts, follow instructions on the pump display. • If the pump was delivering a bolus or filling the cannula, check Daily History and evaluate your need for insulin. • Consider saving your current settings. For details, see *Saving your settings, on page 142*.
Max Fill reached 3*X.X* U. Did you see drops at the end of tubing?	You have exceeded the number of units expected to fill the tubing. By now, insulin should be at the end of the tubing.	• If you see drops at the end of the tubing, select **Yes**. • If you do not see drops, select **No**. • Follow instructions displayed on the pump.

RELEASED

Title and text	Explanation	Next steps
Max Fill reached *4X.X* U. Remove reservoir and select Rewind to restart New Reservoir procedure.	You have exceeded the number of units expected to fill the tubing. By now, insulin should be at the end of the tubing.	• Remove the reservoir. • Check if you still have insulin in the reservoir. If you do, you can continue using the same reservoir. • Select **Rewind** to restart the new reservoir procedure.
No reservoir detected Rewind before loading reservoir.	There is no reservoir in the pump or the reservoir is not properly locked into place.	• Select **Rewind**. • Ensure that your reservoir is filled with insulin. • When prompted, ensure that your reservoir is inserted and properly locked into place.
Power error detected Delivery stopped. Record your settings by uploading to CareLink or write your settings on paper. See User Guide.	The internal power source in your pump is unable to charge. Your pump is operating on the AA battery only.	• Select **OK** to clear the alert. • Check your BG and treat as necessary. • Record your settings as soon as possible because your AA battery may not last long. • Call your local representative for assistance with your pump.
Power loss AA battery was removed for more than 10 min or power was lost. Select OK to re-enter time and date.	Your pump battery has been out for more than ten minutes, and your pump has lost power. You must reset your time and date.	• Select **OK** to go to the Time & Date screen. • Enter the current time, time format, and date.

RELEASED

Title and text	Explanation	Next steps
Pump error Delivery stopped. Current settings cleared. Pump restart needed. Select OK to restart and then re-enter your settings. See User Guide.	Your pump encountered an error and will restart. Your pump settings will return to factory default values.	• When the pump restarts, follow instructions on the pump display. • After restart, check settings and re-enter values as needed. • If you recently saved backup settings in Manage Settings, use Restore Settings. • If the pump was delivering a bolus or filling the cannula, check Daily History and reevaluate your need for insulin. • If this alarm recurs frequently, write down the error code displayed on the alarm screen (you can also find it in your Alarm History) and contact your local representative for assistance with your pump.
Pump error Delivery stopped. Settings unchanged. Pump restart needed. Select OK to restart. See User Guide.	A pump error has occurred, you need to restart your pump.	• Select **OK** to restart your pump. • If the pump was delivering a bolus or filling the cannula, check Daily History and reevaluate your need for insulin. • If this alarm recurs frequently, write down the error code displayed on the alarm screen (you can also find it in your Alarm History) and contact your local representative for assistance with your pump.

RELEASED

Title and text	Explanation	Next steps
Pump error Delivery stopped. Settings unchanged. Select OK to continue. See User Guide.	Your pump encountered an error but a restart is not necessary. The issue is resolved. Your settings are not changed.	• Select **OK** to resume basal delivery. • If the pump was delivering a bolus or filling the cannula, check Daily History and reevaluate your need for insulin. • If this alarm recurs frequently, write down the error code displayed on the alarm screen (you can also find it in your Alarm History) and contact your local representative for assistance with your pump.
Pump restarted Delivery stopped. Settings unchanged. Select OK to continue. See User Guide.	Your pump has encountered a problem and has restarted. Your settings have not been changed.	• Select **OK** to continue. • If the pump was delivering a bolus or filling the cannula, check Daily History and re-evaluate your need for insulin. • If this alarm recurs frequently, write down the error code displayed on the alarm screen (you can also find it in your Alarm History) and contact your local representative for assistance with your pump.
Replace battery Battery life less than 30 minutes. To ensure insulin delivery, replace battery now.	Battery life is low and will be exhausted within 30 minutes.	• Select **OK** to clear the alert. • Replace the AA battery.

RELEASED

Title and text	Explanation	Next steps
Replace battery now Delivery stopped. Battery must be replaced to resume delivery.	Insulin delivery has stopped due to low power. Battery was not replaced after the Low battery Pump alert.	Replace the battery immediately to resume insulin delivery. For details, see *Removing the battery, on page 23*.
Reservoir estimate at 0 U To ensure insulin delivery, change reservoir.	Your reservoir level is estimated at 0 units.	• Select **OK** to clear the alert. • Change the reservoir now.
Resume bolus? *XXX* of *YYY* U delivered. Resume delivery of *ZZZ* U?	A normal bolus delivery has been interrupted because the pump battery was removed. If it is within 10 minutes since this interruption, you can resume this bolus.	• Check the message to see how much of the bolus was actually delivered. • To cancel remaining amount of bolus, select **Cancel**. • To resume remaining amount of bolus, select **Resume**.
Resume Dual bolus? *XX* of *YY* U delivered. Resume delivery of *ZZ* U for *XX:XX* hr?	The Square portion of Dual Bolus delivery has been interrupted. If it is within 10 minutes since this interruption, you can resume this bolus.	• Check the message to see how much of the Dual Wave bolus was actually delivered. • To cancel remaining amount of bolus, select **Cancel**. • To resume remaining amount of bolus, select **Resume**.

RELEASED

Title and text	Explanation	Next steps
Resume Dual bolus? *XX* of *YY* U delivered. Resume delivery of *ZZ* U now, and *AA* U Square for *XX:XX* hr?	The Now portion of a Dual Wave bolus delivery has been interrupted because the pump battery was removed. If it is within 10 minutes since this interruption, you can resume this bolus.	• Check the message to see how much of the Dual Wave bolus was actually delivered. • To cancel remaining amount of bolus, select **Cancel**. • To resume remaining amount of bolus, select **Resume**.
Resume Square bolus? *XX* of *YY* U delivered for *XX:XX* hr. Resume delivery of *ZZ* U for *XX:XX* hr?	The Square Wave bolus delivery was interrupted. If it is within 10 minutes since this interruption, you can resume this bolus.	• Check the message to see how much of the Square Wave bolus was actually delivered. • To cancel remaining amount of bolus, select **Cancel**. • To resume remaining amount of bolus, select **Resume**.
Stuck button Button pressed for more than 3 minutes	The pump has detected that a button has been pressed for an unusually long time.	• Select **OK** to clear the alarm. • If this alarm occurs again, contact your local representative for assistance with your pump. If you are unable to clear the alarm: • Consider another form of insulin, because your pump is not delivering insulin. • Check your BG and treat as necessary. • Contact your local representative for assistance with your pump.

RELEASED

Title and text	Explanation	Next steps
Wrong key pressed Try again	Wrong button selected while unlocking the pump.	• Select **OK** to clear the alert. • Try to unlock the pump. Select the highlighted key when prompted. For more information, see *Unlocking your pump, on page 26*.

CGM (sensor) alarms, alerts, and messages

The following table lists the most common or serious alarms, alerts, and messages related to your sensor glucose readings, as well as the status of your transmitter and sensor. The table also explains the meaning, consequences, and the reasons why these notifications appear, and provides steps for problem resolution.

Title and text	Explanation	Next steps
Alert before high Sensor glucose approaching High Limit. Check BG.	Your SG value is approaching your specified high limit.	• Select **OK** to clear the alert. • Check your BG. • Follow instructions from your healthcare professional and continue to monitor your BG.
Alert before low Sensor glucose approaching Low Limit. Check BG.	Your SG value is approaching your specified low limit.	• Select **OK** to clear the alert. • Check your BG. • Follow instructions from your healthcare professional and continue to monitor your BG.
Alert on high XX.X mmol/L High sensor glucose. Check BG.	Your SG value is at or above your specified high limit.	• Select **OK** to clear the alert. • Check your BG. • Follow instructions from your healthcare professional and continue to monitor your BG.

RELEASED

Title and text	Explanation	Next steps
Alert on low XX.X mmol/L Low sensor glucose. Check BG.	Your SG value is at or below your specified low limit.	• Select **OK** to clear the alert. • Check your BG. • Follow instructions from your healthcare professional and continue to monitor your BG.
Alert on low XX.X mmol/L Low sensor glucose. Insulin delivery suspended since XX:XX. Check BG.	Your SG value is at or below your specified low limit, and the pump has suspended insulin delivery due to a Suspend on low or Suspend before low event.	• Select **OK** to clear the alert. • Check your BG. • Follow instructions from your healthcare professional and continue to monitor your BG.
Basal delivery resumed Basal delivery resumed at XX:XX after suspend by sensor. Check BG.	Your pump is resuming basal insulin delivery after a Suspend on low or Suspend before low event occurred.	• Select **OK** to clear the alert. • Check your BG. • Follow instructions from your healthcare professional and continue to monitor your BG.
Basal delivery resumed Low settings change caused basal to be resumed at XX:XX. Check BG.	Your pump is resuming basal insulin delivery after a Suspend before low or a Suspend on low event occurred, because you have turned off the Suspend before low or the Suspend on low feature.	• Select **OK** to clear the alert. • Check your BG. • Follow instructions from your healthcare professional and continue to monitor your BG.

RELEASED

Title and text	Explanation	Next steps
Basal delivery resumed Maximum 2 hour suspend time reached. Check BG.	Your pump is resuming basal insulin delivery two hours after a Suspend before low or Suspend on low event occurred.	• Select **OK** to clear the alert. • Check your BG. • Follow instructions from your healthcare professional and continue to monitor your BG.
Basal delivery resumed Maximum 2 hour suspend time reached. SG is still under Low limit. Check BG.	Your pump is resuming basal insulin delivery two hours after a Suspend before low or Suspend on low event occurred.	• Your pump has resumed basal insulin delivery; however, your SG value is still at or below your low limit. • Select **OK** to clear the alert. • Check your BG. • Follow instructions from your healthcare professional and continue to monitor your BG.
BG not received Place pump close to transmitter. Select OK to resend BG to transmitter.	The transmitter was unable to receive the calibration BG meter readings from the pump.	• Move your pump and transmitter closer together. • Select **OK**. Your pump tries again to send your BG to your transmitter for sensor calibration.

RELEASED

Title and text	Explanation	Next steps
Calibrate now Check BG and calibrate sensor.	A BG meter reading is needed immediately to calibrate your sensor so that you can continue receiving sensor glucose readings.	• Take a BG meter reading and enter for calibration. After you receive a Calibrate now alert, it takes up to 15 minutes after you calibrate for your pump to receive SG values. For details, see *Calibrating your sensor, on page 184*. • If you are unable to calibrate now, you can use the Snooze feature. Set the desired time, and select **Snooze**. If you do not calibrate before the Snooze time is up, the Calibrate Now alert occurs again.
Calibration not accepted Recheck BG and calibrate sensor.	Your system was unable to use the BG meter readings you entered to calibrate your sensor.	• Wash and dry hands thoroughly. See *Guidelines for calibrating, on page 187*. • Enter a new BG meter reading for calibration as instructed in *Calibrating your sensor, on page 184*. If you receive a Calibration not accepted alert on your second calibration, a Change sensor alert occurs. • Call your local representative if you have questions.

RELEASED

Title and text	Explanation	Next steps
Cannot find sensor signal Disconnect and reconnect transmitter, then select OK. Notice if transmitter light blinks.	The pump has not received a signal from the transmitter.	• Disconnect and reconnect your transmitter and sensor. • See if the light on your transmitter blinks when connected to the sensor. You may need this information for troubleshooting later. • Select **OK**. Your pump searches for your sensor. If your pump receives a signal from your sensor, you do not need to do anything else. If your pump does not receive a signal from the sensor, another message appears to let you know.
Change sensor Insert new sensor and Start New Sensor.	You selected No in the Check sensor insertion message, indicating that your sensor is not fully inserted.	• Select **OK** to clear the alert. • Change your sensor. For details, see your sensor user guide. • After you change your sensor, refer to *Starting the sensor, on page 182*.
Change sensor Second calibration not accepted. Insert new sensor.	This alert occurs when you receive two Calibration not accepted errors in a row.	• Select **OK** to clear the alert. • Change your sensor. For details, see your sensor user guide.
Change sensor Sensor not working properly. Insert new sensor.	Sensor signal is no longer reliable.	• Select **OK** to clear the alert. • Change your sensor. For details, see your sensor user guide.

RELEASED

Title and text	Explanation	Next steps
Check connection Ensure transmitter and sensor connection is secure, then select OK.	The pump fails to detect the transmitter and is unable to receive sensor signal.	• Select **OK** to clear the alert. • If your sensor is fully inserted, select **Yes**. If your sensor is not fully inserted, select **No**. • If your sensor was not fully inserted, insert a new sensor. • If you still cannot connect your sensor, see *My pump cannot find the sensor signal, on page 234*.
Lost sensor signal Move Pump closer to transmitter. May take 15 minutes to find signal.	Transmitter signal has not been received for 30 minutes during or after initialization.	• Move your pump closer to your transmitter. It can take up to 15 minutes for your pump to start communicating with your transmitter. • Select **OK** to clear the alert.
Low battery transmitter Recharge transmitter within 24 hours.	The battery in the transmitter needs to be recharged within 24 hours.	• Select **OK** to clear the alert. • Recharge your transmitter as soon as possible.
Medical device CALL FOR EMERGENCY ASSISTANCE. I have diabetes.	Your pump is suspended due to low SG, and you have not responded to the alarm within 10 minutes.	• Select **Dismiss**. • Immediately call for emergency assistance.

RELEASED

Title and text	Explanation	Next steps
No calibration occurred Confirm sensor signal. Calibrate by XX:XX.	The transmitter was unable to receive the calibration BG meter readings from the pump.	• Select **OK** to clear the alert. • Check the status bar on your pump to ensure that your pump has a signal from your sensor. If there is no sensor signal, see *My pump cannot find the sensor signal, on page 234*. • Calibrate again by the time shown on the pump screen to ensure you continue SG monitoring.
No calibration occurred Confirm sensor signal. Check BG again to calibrate sensor.	The transmitter was unable to receive the required calibration BG from the pump. Calibration is required by the system for SG values to resume. "Calibration required" appears on your sensor graph.	• Select **OK** to clear the alert. • Take another BG meter reading and calibrate again.
Possible signal interference Move away from electronic devices. May take 15 minutes to find signal.	There may be interference from another electronic device that is affecting the communication between your pump and transmitter.	• Move away from other electronic devices. It can take up to 15 minutes for your pump to start communicating with your transmitter. • Select **OK** to clear the alert.

RELEASED

Title and text	Explanation	Next steps
Rise Alert Sensor glucose rising rapidly.	Your SG value has been rising as fast or faster than your preset Rise Alert Limit.	• Select **OK** to clear the alert. • Monitor trend and glucose level. • Follow instructions from your healthcare professional.
Sensor alert occurred Check Alarm History for silenced alerts.	Sensor alert occurred when Alert Silence is on.	• Select **OK** to clear the alert. • Check the Alarm History screen to see which alerts were silenced. For more information about accessing the Alarm History screen, see *Alarm History, on page 122*. • Select the alert to open the Alarm Detail screen. • Take action based on the selected alert.
Sensor connected If new sensor, select Start New. If not, select Reconnect.	The transmitter has detected that you have connected a sensor. The pump needs to know if this is a new sensor or if you have reconnected your old sensor.	• If you have connected a new sensor, select **Start New Sensor**. • If you have reconnected a sensor you have been using, select **Reconnect Sensor**. • In either case, a "warm-up" messages appears on your Home screen, and you are prompted to calibrate your sensor. Your pump starts receiving your SG values again after the two-hour initialization is complete.
Sensor connected Start new sensor.	The transmitter has detected that you have connected a sensor.	• Select **Start New Sensor**. • For more information, see *Starting the sensor, on page 182*.

RELEASED

Title and text	Explanation	Next steps
Sensor expired Insert new sensor.	The sensor has been used for 6 days (144 hours). It has reached the end of its useful life.	Change your sensor. For details, see your sensor user guide.
Sensor signal not found Did transmitter light blink when connected to sensor?	The pump has still not received a signal from the transmitter.	When you reconnected the transmitter to the sensor, did you see a blinking green light on the transmitter? • Select **Yes** or **No** and follow the instructions on the screen.
Sensor signal not found See User Guide.	After multiple attempts, the pump failed to detect the transmitter and is unable to receive sensor signal.	• Select **OK** to clear the alert. • Repeat the connection process. Remove the transmitter from the sensor for about ten seconds, and then reconnect it to the sensor. • It can take up to 15 minutes for your pump to find the sensor signal. • Move your pump closer to your transmitter to improve reception. • Make sure you are away from any electronic devices that might cause interference, such as cellular phones and other wireless devices. • If your pump still cannot find the sensor signal, call your local representative for assistance.

RELEASED

Title and text	Explanation	Next steps
SG value not available If problem continues, see User Guide.	The sensor signals are either too high or too low.	• Select **OK** to clear the alert. • You do not need to change the sensor. If the alert persists, test your transmitter with the tester. Refer to your transmitter user guide for instructions on testing the transmitter.
Sensor warm-up started Warm-up takes up to 2 hours. You will be notified when calibration is needed.	Your sensor is warming up.	• Select **OK** to clear the message. • For more information, see *Starting the sensor, on page 182*.
Suspend before low Delivery stopped. Sensor glucose approaching Low Limit. Check BG.	Your SG value is falling. Insulin delivery is suspended according to your Suspend before low setting and your SG is approaching your specified low limit.	• Select **OK** to clear the alert. • Check your BG. If necessary, treat your BG as directed by your healthcare professional.
Suspend on low Delivery stopped. Sensor glucose XX.X mmol/L. Check BG.	Your SG value is at or below the low limit you specified.	• Select **OK** to clear the alert. • Check your BG. If necessary, treat your BG as directed by your healthcare professional.
Transmitter battery depleted Recharge transmitter now.	The battery in the transmitter needs to be recharged. SG values are not recorded or transmitted until you recharge transmitter.	• Select **OK** to clear the alert. • Recharge your transmitter.

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CareLink alert and message

The following table lists the most common or serious alarms, alerts, and messages related to CareLink. The table also explains the meaning, consequences, and the reasons why these notifications appear, and provides steps for problem resolution.

Title and text	Explanation	Next steps
Connect Device? Device with SN <XXXXXXXXXX> is trying to connect to your pump. Allow connection?	The CareLink USB software is attempting to connect to your pump in preparation for data download.	• Select **Yes** to allow connection, only if you are expecting or performing a data download. • Select **No** to deny connection. If no selection is made, the screen will timeout after 30 seconds and will automatically reject the request.
Download slow Insulin delivery not affected. CareLink download may take longer than usual. Select OK to continue. See User Guide.	The download of pump data is taking longer than expected. Data will not be affected.	• Select **OK** to clear the alert. • Wait for the data to finish downloading. • If problem still persists or if there is no progress in download, call your local representative for assistance.

RELEASED

13

troubleshooting

RELEASED

RELEASED

13 Troubleshooting

This chapter contains procedures and information to help you understand and address conditions that might occur with your pump.

For a list of alarms, alerts, and messages that may appear on your pump, see *Pump alarms, alerts, and messages, on page 202*.

RELEASED

Troubleshooting pump issues

WARNING: If you receive a critical error on your pump, the following screen displays and the pump sirens.

Immediately disconnect from your insulin pump and discontinue use. Contact your local representative for assistance.

Remember, your body still needs insulin while your pump is removed. It is important that you consult your healthcare professional to determine an alternate method of receiving insulin while your pump is removed.

What is a Check Settings alarm?

This alarm occurs when a condition causes your pump to reset to factory settings. You see this alarm after your pump guides you through re-entering the Startup Wizard settings.

The Check Settings alarm is letting you know that other settings may have been cleared or reverted to factory default values. Review any settings that you have not already set in Startup Wizard and re-enter the values, if necessary.

My pump is asking me to rewind

WARNING: Make sure the infusion set is disconnected from your body before you rewind your pump or fill the infusion set tubing. Never insert the reservoir into the pump while the tubing is connected to your body. Doing so could result in an accidental infusion of insulin, which may cause low BG.

You always rewind your pump when changing the reservoir. Rewinding returns the piston in the reservoir compartment to its starting position. It is normal for your pump to ask you to rewind anytime you must remove and replace the reservoir, such as when resolving an Insulin Flow Blocked alarm or addressing a problem loading the reservoir.

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I dropped my pump

Caution: If your pump has been dropped or you suspect your pump is damaged, carefully inspect your pump to ensure there are no cracks before exposing your pump to water.

Do the following:

1. Check that all connections are still tightly in place.
2. Check the display, button area, and pump case for cracks or damage.
3. Check the infusion set, including the tubing connector and tubing for cracks or damage.
4. Review the status screen, basal rates and other pump settings.
5. Perform the Self Test procedure by going to:

Menu > Utilities > Self Test

For details, see *Self Test, on page 145*.

6. If the Self Test does not complete successfully, or if you are concerned about your pump, call your local representative for assistance and check your BG.

I cannot get to the Manage Settings screen

If you go to Menu > Utilities > Manage Settings, a message appears telling you that the feature is not normally accessible and to consult your user guide. To access the Manage Settings screen:

1. Menu > Utilities > Manage Settings
2. Simultaneously press and hold > and ↩ for about two seconds. The Manage Settings screen appears. For more information, see *Managing your pump settings , on page 142*.

My pump display times out too quickly

Your pump display times out after 15 seconds by default in order to conserve battery power. You can increase this setting up to three minutes. Go to **Menu > Utilities > Display Options**, and then adjust the Backlight setting as desired. For more information, see *Display Options, on page 141*.

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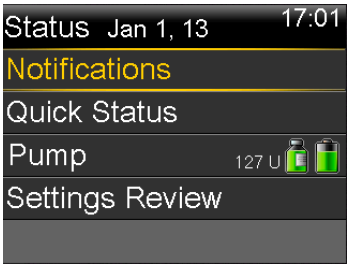
Note: Be aware that using a longer Backlight time causes your pump to use more battery power. When your pump battery is low, the timeout for the backlight on your pump screen is automatically reduced.

Where is my pump status screen?

1. To go to the Status screen, highlight and select the status bar at the top of your Home screen.

The Status screen appears.



2. From the Status screen, you can select the type of status information you want to view. For example, to see a quick status of your pump and recent insulin deliveries, go to Quick Status. For details, see *Status screens, on page 31*.

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My pump is asking me to enter my settings

Certain pump errors can clear your settings and return them to their factory default values. This also happens if you intentionally clear your settings. Do not clear your settings unless directed to do so by your healthcare professional.

If you have saved your settings using the Save Settings option, you can restore them using the Restore Settings option. If you restore your settings, ensure the restored settings match the settings prescribed most recently by your healthcare professional.

The Startup Wizard appears automatically when your pump restarts. The wizard guides you through entering the following information. Be sure to have these values ready when you begin.

- Time format, time, and date
- Carb unit
- Active Insulin Time

- Basal patterns

After you enter your pump settings, you have the option of entering the following Bolus Wizard settings:

- Carb ratio or Exchange ratio
- Insulin sensitivity factor
- BG target

To enter your pump settings:

1. Begin entering your settings by selecting your language. Click **Next** to go to each new screen.
2. When the Select Time Format screen appears, select a 12-hour or a 24-hour time format.
3. When the Enter Time screen appears, adjust the setting to the current time. If you are using a 12-hour clock, be sure to specify AM or PM.
4. When the Enter Date screen appears, adjust the **Year**, **Month** and **Day** to the current date.
5. When the Select Carb Unit screen appears, select **Grams** or **Exchanges** as the unit your pump uses to display carbohydrate information.
6. When the Active Insulin Time screen appears, enter the **Duration**.

   For details, see *About active insulin, on page 72*.
7. Enter your first basal rate by entering the End time and the Rate. You can enter more basal patterns after you complete the startup wizard.

   For details, see *Adding a new basal pattern, on page 42*.

   After you complete your basal pattern, a screen appears to allow you to review your basal information.
8. When the message appears asking if you want to setup the Bolus Wizard settings, do one of the following:
   - Select **Yes** to continue entering your settings, then continue to the next section.
   - Select **No** if you do not want to enter your Bolus Wizard settings. A message appears letting you know that your settings are complete. Select **OK** to continue using your pump.

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To enter your Bolus Wizard settings:

1. When your pump shows a list of settings for the Bolus Wizard, make sure you have the values you need before continuing.
2. Depending on the Carb Unit you set earlier, either the Carb Ratio or the Exch Ratio screen appears. Enter your carb ratio or exchange ratio by entering the End time and the Rate. You can adjust your carb or exchange ratio at any time.

   For details, see *Changing your carb or exchange ratio, on page 69*.
3. When the Edit Sensitivity screen appears, enter your insulin sensitivity factor by entering the End time and the mmol/L per unit. You can adjust your insulin sensitivity factor at any time.

   For details about entering insulin sensitivity factors, including how to set multiple time periods, see *Changing your insulin sensitivity factor, on page 70*.
4. When the BG Target screen appears, enter your BG Target range by entering the End time and your Lo (low) and Hi (high) limits. You can adjust your BG Target ranges at any time.

   For details, see *Changing your Bolus Wizard BG target, on page 70*.

   A message appears confirming that your setup is complete.
5. Select **Next** to display the Home screen, and continue using your pump.

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Troubleshooting sensor issues

My pump cannot find the sensor signal

If your pump cannot find the sensor signal after you connect your sensor and transmitter, follow the instructions on the pump screen to troubleshoot the issue as described below.

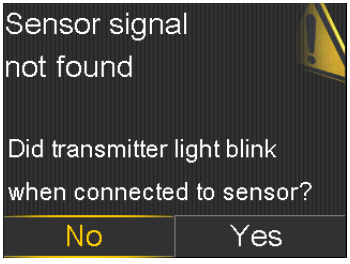
If your pump finds the sensor signal at any time during troubleshooting, your pump beeps or vibrates, and "Warm up" appears on your sensor graph. It can take up to two hours for your sensor to warm up.

Note: If you are using Alert Silence and currently have all sensor alerts silenced, your pump does not display the troubleshooting screens. Any glucose alerts you received are displayed in the Alarm History screen.

1. Make sure your setup meets the following requirements:
   - Your transmitter is fully charged.

     If both lights on the charger are off, your transmitter is fully charged. For details, see your transmitter user guide.
   - You have only one transmitter connected to your pump.

     Delete the current transmitter that is connected to your pump before continuing. For details, see *Deleting the transmitter from your pump, on page 181*.
   - Your transmitter is placed next to your pump.
   - Your transmitter is reconnected to the pump, if your pump has been recently reset. For details, see *Wirelessly connecting your pump and transmitter using Auto Connect, on page 175*.
   - The Airplane Mode is turned off on your pump.
   - You have applied the tape correctly, as instructed in the serter user guide.
2. Disconnect the transmitter from the sensor for at least 10 seconds.
3. Reconnect the transmitter with the sensor to restart communication. While the light on the transmitter is blinking, select **OK** on the pump to acknowledge the alert.
4. Depending on whether the light blinked when you connected the transmitter to the sensor, select **Yes** or **No** on your pump and do one of the following:



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- If the transmitter light did not blink, you need to charge your transmitter. When your transmitter is charged, start your sensor. For details, see *Starting the sensor, on page 182*.
- If your transmitter light blinked, but you still have no sensor signal, continue to the next step.

5. Move your pump closer to your transmitter and select **OK**. It can take up to 15 minutes for your pump to find the sensor signal.
6. If your pump still cannot find the sensor signal, make sure you are away from any electronic devices that might cause interference, such as cellular phones and other wireless devices, and select **OK**.
7. If you have gone through all the troubleshooting steps on your pump screen, and your pump still cannot find the sensor signal, or if your sensor graph displays "Sensor signal not found. See User Guide," call your local representative for assistance.

Calibration not accepted

Calibration not accepted alert occurs when one of the following happens:

- System was unable to use the BG meter readings you entered to calibrate your sensor.
- System rejects two calibrations in a row from the same sensor.
- The transmitter was unable to receive the calibration BG meter readings from the pump due to failed sensor signal.

For details on when and how to calibrate your sensor, see *Calibrating your sensor, on page 184*.

Why does the SmartGuard suspend by sensor icon on my Home screen appear gray?

The SmartGuard suspend by sensor icon appears gray on the Home screen when either the Suspend on low or Suspend before low feature is unavailable. The suspend features may be unavailable due to the following conditions:

- A suspend event has occurred recently.

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After a Suspend before low or Suspend on low event occurs, there is a period of time when the suspend functionality is unavailable. This time will vary depending on whether or not you respond to the suspend event. Typically, the suspend features will be unavailable for 30 minutes after your basal insulin delivery is resumed. For details, see *When Suspend before low is unavailable, on page 160* or *When Suspend on low is unavailable, on page 163*.

- No SG values are available.

  SG values may be unavailable because:

  - Your pump is in Airplane Mode.

    For more information, see *Airplane Mode, on page 137*.

  - Sensor calibration is required.

    For details on when and how to calibrate your sensor, see *Calibrating your sensor, on page 184*.

  - Your pump has lost connection to the sensor.

    Move your pump closer to the sensor. For more details, see *My pump cannot find the sensor signal, on page 234*.

  - The sensor glucose value received was outside the expected range and was not displayed.

    Select **OK** to clear the alert. If the issue continues, you may need to replace the sensor.

If the issue persists, call your local representative for assistance.

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14 Maintenance

Read your warranty statement included with your pump for information about what is covered during your warranty period.

Cleaning your pump

Caution: Never use organic solvents, such as lighter fluid, nail polish remover, or paint thinner to clean your pump. Never use lubricants with your pump. When cleaning your pump, be sure to keep the reservoir compartment dry and away from moisture.

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Make sure you have the following supplies ready for cleaning your pump: three or four small, clean, soft cloths, a mixture of water with a mild detergent, clean water, 70% alcohol, and a few clean cotton tips and cotton balls.

To clean your pump:

1. Dampen a cloth with water mixed with a mild detergent.
2. Using the cloth, wipe the outside of the pump.
3. Dampen a clean cloth with water and wipe to remove any detergent residue.
4. Dry with a clean cloth.
5. Wipe your pump with a 70% alcohol wipe for disinfection.
6. Using a dry clean cotton tip, remove any battery residue from the battery cap.
7. Using a dry clean cloth, remove any battery residue from the battery compartment opening.

Cleaning your transmitter

Always refer to your transmitter user guide for instructions on cleaning the transmitter.

Storing your pump

Storage mode allows you to safely place your pump in storage while not in use.

Note: If you place your pump in storage mode, it is important to insert a new AA battery for 8 to 12 hours every six months to recharge the internal power source.

WARNING: Active insulin is now cleared. Any active insulin tracked prior to the pump entering storage mode is not included in any new Bolus Wizard calculations.

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Placing your pump in storage mode:

1. Remove the AA battery from the pump. For details, see *Removing the battery, on page 23*.

   Note: When you remove the battery, your pump issues an Insert Battery alarm for 10 minutes or until you place your pump into storage mode.

2. Press and hold ↩ until your screen turns off.

   Caution: Store your pump at room temperature. While in storage, the pump should never be exposed to temperatures above 35°C (95°F).

Waking your pump from storage mode

1. Insert a new AA battery into your pump. For details, see *Inserting the battery, on page 22*.

A Pump Error message appears.

2. Select **OK**.

   Your pump displays a Power Loss alarm.

3. Select **OK**.

   The Time & Date screen appears.

4. Enter the current **Time**, **Time Format** and **Date**.

5. Select **Save**.

   Your pump displays an Active Insulin Cleared alert.

6. Select **OK**.

   Make sure that all of your settings, such as basal rate, are set as desired. If you need to, reapply your last saved settings by using the Restore Settings option as instructed in *Restoring your settings, on page 143*.

Storing your transmitter

Always refer to your transmitter user guide for instructions on storing your transmitter.

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product specifications and safety information

RELEASED

RELEASED

15 Product specifications and safety information

This chapter provides detailed product specifications and safety information.

Product specifications

This section provides detailed information on product specifications.

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Alarm and alert escalation

The following alerts may escalate to a siren:

- Alert before high
- Alert before low
- Alert on high
- Alert on low
- Basal delivery resumed
- BG not received
- Calibration not accepted
- Calibrate now
- Cannot find sensor signal
- Change sensor
- Check connection
- Lost sensor signal
- No calibration occurred
- Possible signal interference
- Rise Alert
- Sensor expired
- Sensor signal not found
- SG value not available
- Suspend before low (only if Alert before low is on)
- Transmitter battery depleted

Minutes from alarm or alert	Audio	Audio and vibration	Vibration
0	Audio	Audio and vibrate	Vibrate
1	Audio	Audio and vibrate	Vibrate
2	Audio	Audio and vibrate	Vibrate
3	Audio	Audio and vibrate	Vibrate
4	Audio	Audio and vibrate	Vibrate
5	Audio	Audio and vibrate	Vibrate
6	Audio and vibrate	Audio and vibrate	Audio and vibrate
7	Audio and vibrate	Audio and vibrate	Audio and vibrate
8	Audio and vibrate	Audio and vibrate	Audio and vibrate
9	Audio and vibrate	Audio and vibrate	Audio and vibrate
10	Siren and vibrate	Siren and vibrate	Siren and vibrate

Note: The Medical device alarm sirens immediately.

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Altitude range

- Pump operating range is from 70.33 kPa (10.2 psiA) to 106.18 kPa (15.4 psiA)
- Storage range is from 49.64 kPa (7.2 psiA) to 106.18 kPa (15.4 psiA)

Audio frequency

The following table lists the various audible tones and their corresponding frequencies:

Tone name	Frequency tolerance (+/- 1%)
Alarm	1655 Hz followed by 3310 Hz
Alternate Alarm	1850 Hz
Siren (escalated alarm)	1655 Hz, followed by 3310 Hz
Alert	934 Hz

Tone name	Frequency tolerance (+/- 1%)
High Sensor Glucose	1312 Hz, followed by 1410 Hz, 1500 Hz, 1619 Hz, 1722 Hz
Low SG	1722 Hz, 1619 Hz, 1500 Hz, 1410 Hz, 1312 Hz
Lost SG	1485 Hz, followed by 1395 Hz, 1320 Hz, 1395 Hz
Message tone	1655 Hz
Reminder tone	934 Hz
Fill tubing tone	1850 Hz
Bolus delivery cancellation tone	1485 Hz, followed by 1655 Hz and 1485 Hz
Loading complete tone	934 Hz
Reservoir loading in progress tone	1850 Hz
Easy Bolus activation	1045 Hz
Easy Bolus step 1 increment	1175 Hz
Easy Bolus step 2 increment	1320 Hz
Easy Bolus step 3 increment	1395 Hz
Easy Bolus step 4 increment	1570 Hz
Easy Bolus step 5 increment	1760 Hz

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Backlight

Type	LED (Light-emitting Diode)
Time out	15 seconds (default), 30 seconds, one minute, three minutes
Time out when battery is low	15 seconds (default), 30 seconds

Basal delivery

Delivery rate range	0 to 35 units per hour or the Max Basal Rate amount, whichever is lower.
Max Basal Rate default	2 units per hour

Basal patterns	Maximum of 8 patterns. Each pattern covers a 24 hour period and can have up to 48 rates. Rates are set in 30 minute increments.
Basal pattern names	Fixed names: Basal 1, Basal 2, Basal 3, Basal 4, Basal 5, Workday, Day Off, Sick Day
Increments	• 0.025 units per hour for basal amounts in the range 0 to 0.975 units • 0.05 units per hour for basal amounts in the range 1 to 9.95 units • 0.1 units per hour for basal amounts of 10 to 35 units

BG Target

Maximum targets	8
Range	3.3 to 13.9 mmol/L
Default value for High BG targets and Low BG targets	None

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BG meter value

The most recent BG value received from the meter. If you are using a compatible Bayer meter, this value appears on the Home screen when the Sensor feature is off. This value also appears in the Bolus Wizard screen when setting up a bolus.

Expiration	12 minutes
Range	1.1 to 33.3 mmol/L

Bolus delivery

Bolus Speed options	• Standard: 1.5 units/minute • Quick: 15 units/minute
Bolus programming increments	• 0.025 units • 0.05 units • 0.1 units

Fluid delivered/stroke	• 0.25 µL (microliter) for 0.025 unit pump stroke • 0.5 µL for 0.05 unit pump stroke • 2.0 µL for 0.2 unit pump stroke

Bolus Wizard feature default settings

Item	Default	Limits	Increments
Carb units	grams	-	-
Insulin to carb (or exchange) ratio	None	1–200 g/u (0.075–15.0 u/exch)	0.1 g/u for 1–9.9 g/u; 1 g/u for ratios of 10 g/u to 200 g/u (0.001 u/exch for 0.075–0.099 u/exch 0.01 u/exch for 0.10–9.99 u/exch; 0.1 u/exch for 10–15 u/exch)
Insulin Sensitivity Factor	None	0.3–22.2 mmol/L	0.1 mmol/L
BG Target	None	3.3–13.9 mmol/L	0.1 mmol/L
Active Insulin Time	6 hours	2 to 8 hours	15 minutes

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Bolus Wizard feature specifications

There are four different formulas the Bolus Wizard feature uses to estimate a bolus, depending on your current BG. The following formulas apply only when the carb units are in grams.

1. If your current BG is greater than your High BG Target, the Bolus Wizard feature subtracts active insulin from the BG correction estimate, then adds this to the food estimate to get the total bolus estimate. However, if the result of subtracting active insulin from BG correction estimate is a negative number (less than zero), the total bolus estimate is based only on the food estimate.

(food estimate) (correction estimate)

$$\text{total bolus estimate} = \frac{A}{B} + \frac{C - D}{E} - \text{active insulin}$$

where:
A = food (grams)
B = carb ratio
C = current BG
D = High BG Target
E = insulin sensitivity

Food estimate:

Carb grams ÷ Carb ratio = Units of insulin

Correction estimate:

(Current BG - High BG Target) ÷ Insulin sensitivity - Active insulin = Units of insulin

Total bolus estimate:

Food estimate + Correction estimate = Units of insulin

2. If your current BG is less than your Low BG Target, the Bolus Wizard feature adds the BG correction estimate to the food estimate to get the total bolus estimate.

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(food estimate) (correction estimate)

$$\text{total bolus estimate} = \frac{A}{B} + \frac{C - D}{E}$$

where:
A = food (grams)
B = carb ratio
C = current BG
D = Low BG Target
E = insulin sensitivity

Food estimate:

Carb grams ÷ Carb ratio = Units of insulin

Correction estimate:

(Current BG - Low BG Target) ÷ Insulin sensitivity = Units of insulin

Total bolus estimate:

Food estimate + Correction estimate = Units of insulin

3. If your current BG is between or equal to your High or Low BG Target, the total bolus estimate is based only on the food estimate.

$$\text{total bolus estimate} = \text{(food estimate)} \quad \frac{\text{food (grams)}}{\text{carb ratio}}$$

Food estimate:

Carb grams ÷ Carb ratio = Units of insulin

Note: When the current BG is below the Low BG Target, an active insulin amount is not considered in the Bolus Wizard feature calculations.

Total bolus estimate = Food estimate

4. If you do not enter a BG, the total bolus estimate is based only on the food estimate.

Following are some notes about using the Bolus Wizard:

- If a Dual Wave bolus is less than the estimate due to the Max Bolus limit or a change that you make, the Square portion is reduced first.
- Based on the Active Insulin Time setting you choose, your pump keeps track of how much insulin is still active in your body. This is shown as Active Insulin or Act. Ins. on the Home screen, Bolus screen, Manual Bolus screen, Preset Bolus, and Daily History screens. This prevents stacking of insulin, and lowers the chances of hypoglycemia.
- The Bolus Wizard feature may utilize your current BG measurement, carbohydrate consumption, and active insulin to calculate your estimated bolus.
- Active Insulin Curve

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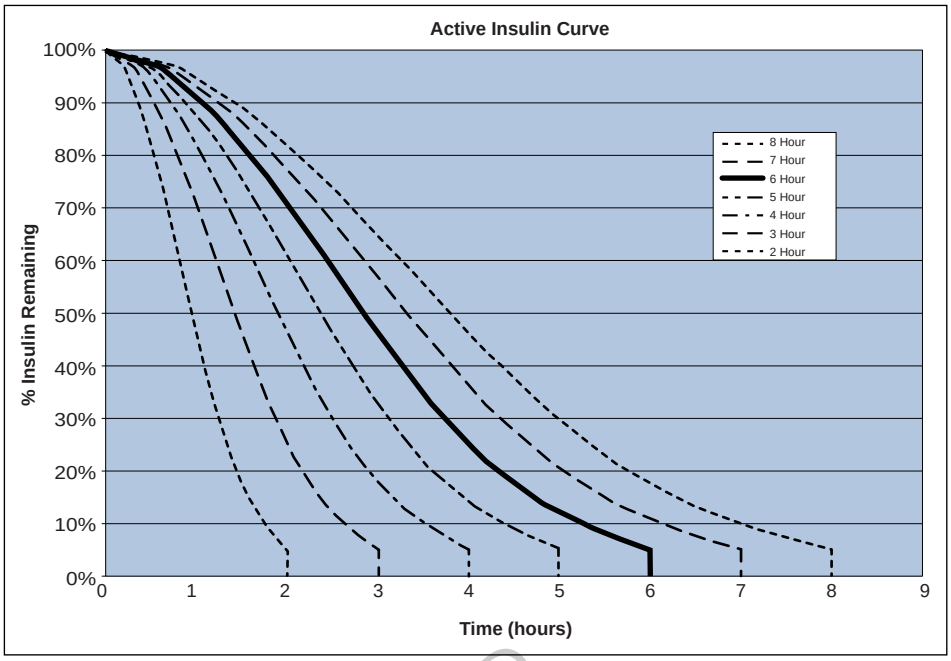

Graph adapted from Mudaliar and colleagues, Diabetes Care, Volume 22, Number 9, Sept. 1999, page 1501.

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Carb ratios

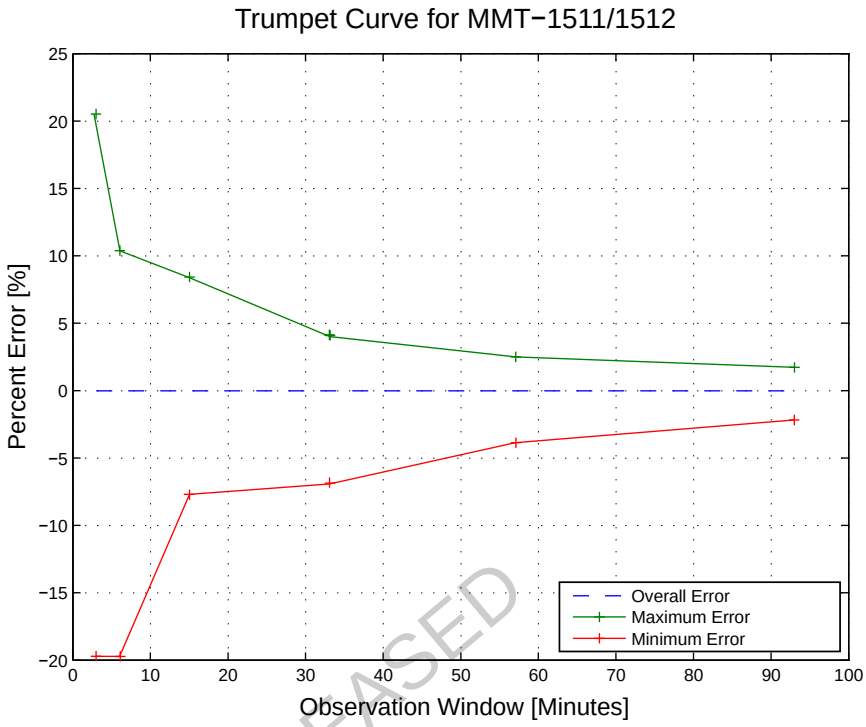
Maximum ratio settings	Range
8	1 to 200 grams/unit
	0.075 to 15 units/exch

Delivery accuracy

- Delivery accuracy for basal rate is ±5%.

  Delivery accuracy for bolus volumes < 0.1 unit is ±20% and delivery accuracy for bolus volumes ≥ 0.1 unit is ±5%.
- All Normal boluses are delivered within 50 minutes ±3 seconds at Standard rate (75 units, at 1.5 units per minute), and within 5 minutes ±3 seconds at Quick rate (75 units, at 15 units per minute).
- The maximum infusion pressure generated and the occlusion threshold pressure is 86.12 kPa (12.49 psi). The bolus volume generated is 0.01225 mL.

- The following is a representative delivery accuracy curve.



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Easy Bolus

Allows user to set up and deliver a Normal Bolus when the pump is in Sleep Mode. This is done using the ∧ and with the help of audio and vibration cues.

Audio mode range	0 to 20 increments or Max Bolus limit, whichever comes first
Vibrate mode range	0 to 20 increments or Max Bolus limit, whichever comes first
Default step size	0.1 unit
Adjustable step size	0.1 to 2 units per increment up to Max Bolus limit

Environmental conditions

- Pump operating temperature range is from 5°C (41°F) to 40°C (104°F).
- Air pressure range is from 10.2 psi to 15.4 psi (700 hPa to 1060 hPa).

- Operating humidity range of the case: 20% to 90%.
  This requirement exceeds IEC 60601-1, subclause 7.9.3.1 (30% to 75%).

Filling the infusion set and cannula

- The cannula can be filled from 0.025 units to 5.1 units, in increments of 0.025 units.
- The standard fill rate is 1.5 units per minute.

  The quick fill rate is 15 units per minute.
- When filling the tubing, a warning occurs at 30 units, and thereafter at every 10 units.
- Insulin used to fill the infusion set is recorded in the Daily History.

Infusion pressure

The maximum infusion pressure and occlusion pressure is 86.12 kPa (12.49 psi).

Insulin delivery default settings

Bolus settings

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Item	Default setting	Limits	Increments
Bolus Wizard feature:	Off	-	-
Easy bolus:	Off	-	-
Easy bolus step size:	0.1 U	0.1 U to 2 U	-
Bolus increment:	0.10 U	0.025 U 0.05 U 0.10 U	-
Dual/Square bolus:	Off	-	-
Max bolus:	10 U	0 to 75 U (per single bolus)	-
Bolus BG Check Reminder:	Off	0:00 to 5:00	0:30

Basal settings

Item	Default setting	Limits	Increments
Max Basal Rate	2 U/h	0–35 U/h	0.025 U for 0.025–0.975 U/h 0.05 U for 1.00–9.95 U/h 0.1 U for rates of 10.0 U/h or more
Basal Rate	0.000 U/h	0.000 U/h to Max Basal Rate setting	0.025 U for 0.025–0.975 U/h 0.05 U for 1.00–9.95 U/h 0.1 U for rates of 10.0 U/h or more
Temp Basal Type	Percent	Percent, Rate	N/A
Temp Basal Percent	100%	0-200%	5%
Temp Basal Rate	Current basal rate	0.0 U/hr to Max Basal Rate	0.025 U for 0.025–0.975 U/h 0.05 U for 1.00–9.95 U/h 0.1 U for rates of 10.0 U/h or more

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Insulin sensitivity factor

Maximum settings	8
Default	None. Insulin sensitivity is set during Startup of the Bolus Wizard.
Range	0.3 to 22.2 mmol/L/unit

Low Reservoir reminder

The values are based on displayed amount, not actual amount.

Alert type	Alert range	Increment	Default value
Time	First reminder occurs at 2 to 24 hours. Second reminder occurs one hour before empty. The second reminder is automatic and cannot be changed by the user.	30 min	8 hours
Units	First reminder occurs at 5 to 50 units. Second reminder occurs at 50 percent of the remaining specified amount. The second reminder is automatic and cannot be changed by the user.	1 unit	20 units

Max Bolus

Range	0 to 75 units
Default	10 units

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Normal bolus

Range is 0.025 to 75 units of insulin, and limited by the Max Bolus setting.

Occlusion detection

When occlusion is detected, the Insulin flow blocked alarm occurs. The occlusion alarm is triggered by an average of 2.23 units of missed insulin (standard bolus) or 1.97 units of missed insulin (quick bolus). The MiniMed pump is intended for use with U100 insulin. This table shows occlusion detection for four different situations when using U100 insulin.

Rate	Minimum time before alarm	Average time before alarm	Maximum time before alarm
bolus delivery (10 units at standard speed)	71 seconds	95 seconds	136 seconds
bolus delivery (10 units at quick speed)	9 seconds	10 seconds	14 seconds
basal delivery (1.0 u/h)	2.00 hours	2.50 hours	3.80 hours
basal delivery (0.025 u/h)	123.38 hours	142.03 hours	178.33 hours

Percent temp basal

The default value is 100 percent of basal programming.

Range	0 to 200%
Default	100% of basal programming
Increment	5%

Program safety checks

A single fault condition will cause the pump to suspend insulin delivery. Maximum infusion with a single fault condition is 0.2 units.

Pump dimensions

The MMT-1511 pump dimensions in inches are approximately 2.1 width x 3.34 length x 0.96 depth.

The MMT-1511 pump dimensions in centimeters are approximately 5.3 width x 8.5 length x 2.44 depth.

The MMT-1711 pump dimensions in inches are approximately 2.1 width x 3.78 length x 0.96 depth.

The MMT-1711 pump dimensions in centimeters are approximately 5.3 width x 9.6 length x 2.44 depth.

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Pump memory

User settings and pump history are stored in non-volatile memory which will retain data. The memory size will hold 90 days of pump history before it becomes full and has to be written over. This means that at any time the user can review a maximum of 90 days of history.

Pump weight

The mass of the MiniMed 640G insulin pump (MMT-1511) is approximately 91.9 grams.

The mass of the MiniMed 640G insulin pump (MMT-1711) is approximately 95.7 grams.

Sensor default settings

High sensor settings			
Item	**Default setting**	**Limits**	**Increments**
High SG alert limit	13.8 mmol/L	5.6 to 22.2 mmol/L	0.2 mmol/L
Alert before high	Off	-	-
Alert on high	Off	-	-
Time before high	15 minutes	5 to 30 minutes	5 minutes
Rise Alert	Off	-	-
Rise Limit	Two up arrows	• 1 up arrow (0.056 mmol/L/min) • 2 up arrows (0.111 mmol/L/min) • 3 up arrows (0.167 mmol/L/min) • Custom limit (0.050 to 0.275 mmol/L/min)	
High Snooze	1 hour	5 minutes to 3 hours	5 minutes

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Low sensor settings			
Item	**Default setting**	**Limits**	**Increments**
Low SG alert limit	3.4 mmol/L	2.8 to 5.0 mmol/L	0.2 mmol/L
Suspend before low	Off	-	-
Suspend on low	Off	-	-
Alert before low	Off	-	-
Alert on low	Off	-	-
Low Snooze	20 minutes	5 minutes to 1 hour	5 minutes

Low sensor settings			
Item	**Default setting**	**Limits**	**Increments**
Resume basal alert	Off	-	-

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Guidance and manufacturer's declaration

Guidance and Manufacturer's Declaration - Electromagnetic Emissions		
The MiniMed 640G insulin pump is intended for use in the electromagnetic environment specified below. The customer or the user of the MiniMed insulin pump should make sure that it is used in such an environment.		
Emissions Test	Compliance	Electromagnetic Environment - Guidance
RF emissions Test: 47 CFR Part 15, Subpart C Section 15.247(a)(2)/RSS-210 FHSS– DAOO-705, DTS-KDB 558074, ANSI C63.4, RSS-Gen, FCC Part 15 Section 15.109, Class B/ANSI c63.4 (2009)	• 6 dB and 99% Bandwidths: Pass • Maximum Output Power: Pass • TX Spurious Emissions: Pass • Power Spectral Density: Pass	The MiniMed insulin pump must emit electromagnetic energy in order to perform its intended function. Nearby electronic equipment may be affected.
RF emissions EN55011 (2009)+A1	Class B	The MiniMed insulin pump is suitable for use in all establishments, including domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
RTCA DO 160G (2010) 20.5 and 21.5	Complies	
ARIB STD-T66	Complies	

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Guidance and Manufacturer's Declaration - Electromagnetic Immunity			
The MiniMed 640G insulin pump is intended for use in the electromagnetic environment specified below. The customer or the user of the MiniMed insulin pump should assure that it is used in such an environment.			
Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment - Guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±8 kV contact ±15 kV air	±30 kV air (<5% relative humidity)	For use in a typical domestic, commercial, or hospital environment.
Electrical fast transient/ burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/ output lines	Not applicable	Requirement does not apply to this battery powered device.
Surge IEC 61000-4-5	±1 kV line(s) to line(s) ±2 kV line(s) to earth	Not applicable	Requirement does not apply to this battery powered device.
Voltage dips, short interruptions and voltage variations on power supply lines IEC 61000-4-11	<5% U_T (>95% dip in U_T) for 0.5 cycle	Not applicable	Requirement does not apply to this battery powered device.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	400 A/m (continuous field at 60 seconds) 4000 A/m (short duration at 3 seconds)	400 A/m 4000 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
Note: *U_T is the a.c. mains voltage prior to application of the test level.*			

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Guidance and Manufacturer's Declaration - Electromagnetic Immunity			
The MiniMed 640G insulin pump is intended for use in the electromagnetic environment specified below. The customer or user of the MiniMed insulin pump should assure that it is used in such an electromagnetic environment.			
Immunity Test	IEC 60601 Level	Compliance Level	Electromagnetic Environment Guidance
			Portable and mobile RF communications equipment should be used no closer to any part of the MiniMed insulin pump, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.

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Guidance and Manufacturer's Declaration - Electromagnetic Immunity			
The MiniMed 640G insulin pump is intended for use in the electromagnetic environment specified below. The customer or user of the MiniMed insulin pump should assure that it is used in such an electromagnetic environment.			
Radiated RF IEC 61000-4-3	10 V/m 80 MHz to 800 MHz 10 V/m 800 MHz to 2.5 GHz	10 V/m 80 MHz to 800 MHz 10 V/m 800 MHz to 6 GHz	Recommended separation distance $d = [12/E_1]\sqrt{P}$ 80 MHz to 800 MHz $d = [23/E_1]\sqrt{P}$ 800 MHz to 6 GHz Where *P* is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and *d* is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey[a], should be less than the compliance level in each frequency range[b]. Interference may occur in the vicinity of equipment marked with the following symbol:
Note: *At 80 MHz and 800 MHz, the higher frequency range applies.* ***Note:*** *These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption, and reflection from structures, objects and people.* **Note:** The table is per IEC (EN) 60601-1-2 Edition 3.			

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Guidance and Manufacturer's Declaration - Electromagnetic Immunity
The MiniMed 640G insulin pump is intended for use in the electromagnetic environment specified below. The customer or user of the MiniMed insulin pump should assure that it is used in such an electromagnetic environment.
[a]Field strengths from fixed transmitters, such as base stations for radio (cellular/ cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcasts and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the MiniMed insulin pump is used exceeds the applicable RF compliance level above, the insulin pump should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the MiniMed insulin pump. [b]Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 10 V/m.

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Recommended separation distances between the MiniMed 640G insulin pump and common household radio transmitters			
Household RF Transmitter	Frequency	Recommended Separation Distance (meter)	Recommended Separation Distance (inch)
Telephones			
Cordless Household	2.4 GHz	0.3	12
Cordless Household	5.8 GHz	0.3	12
TDMA-50 Hz (cell phone)	1.9 GHz	0.3	12
TDMA-50 Hz (cell phone)	800 MHz	0.3	12
PCS (cell phone)	1.9 MHz	0.3	12
DCS (cell phone)	1.8 MHz	0.3	12
GSM (cell phone)	900 MHz	0.3	12
GSM (cell phone)	850 MHz	0.3	12
CDMA (cell phone)	800 MHz	0.3	12
Analog (cell phone)	824 MHz	0.3	12
CDMA (cell phone)	1.9 MHz	0.3	12
WiFi Networks			
802.11b	2.4 GHz	1	39.5
802.11g	2.4 GHz	1	39.5
802.11n	2.4 GHz	1	39.5
Bluetooth 500 kb/s	2.4 GHz	0.1	3.93
ZigBee 250 kb/s	2.4 GHz	0.1	3.93

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Recommended separation distances between portable and mobile RF communications equipment and the MiniMed 640G insulin pump

The insulin pump is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or user of the MiniMed insulin pump can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the MiniMed insulin pump as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter (W)	Separation distance according to the frequency of transmitter (m)	
	80 MHz to 800 MHz $d=1.2\sqrt{P}$	800 MHz to 6 GHz $d=2.3\sqrt{P}$
0.01	0.12	0.23
0.1	0.38	0.73
1	1.2	2.3
10	3.8	7.3
100	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance *d* in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where *p* is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

Note: *At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.*

Note: *These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.*

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Wireless communication

Quality of service

The CGM transmitter and MiniMed insulin pump are associated as part of an 802.15.4 network for which the pump functions as the coordinator and the CGM transmitter as an end node. In an adverse RF environment the MMT-1511/1711 pump will assess channel changing needs based on "noise" levels detected during

an energy scan. The pump will perform the energy scan if after 10 minutes no CGM transmitter signal has been received. If the channel change occurs the pump will send beacons on the new channel.

The CGM transmitter will initiate a channel search when beacon detection fails on the associated channel. The search will be conducted across all five channels. When the beacon is located the transmitter will rejoin on the identified channel. Upon re-association any missed packets (up to 10 hours) will be transmitted from the CGM transmitter to the pump.

In normal operation the CGM transmitter will transmit a packet every 5 minutes and retransmit the packet if the data is corrupted or missed.

Radio frequency (RF) communications specifications

Utilizes the IEEE 802.15.4 protocol with the proprietary data format.

Pump frequency	2.4 GHz; proprietary Medtronic protocol; range up to 1.8 meters (6 feet)
Maximum output power (EIRP)	-1.59 dBm
Operating frequencies	2420 MHz, 2435 MHz, 2450 MHz, 2465 MHz, 2480 MHz
Bandwidth	5 MHz which is allocated channel bandwidth per the IEEE protocol

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Data security

The MiniMed 640G insulin pump is designed to only accept radio frequency (RF) communications from recognized and linked devices (you must program your pump to accept information from a specific device).

The MiniMed 640G system ensures data security via proprietary means and ensures data integrity using error checking processes, such as cyclic redundancy checks.

Icon table

Follow instructions for use	
Manufacturer	
Date of manufacture	
Use by date	
Catalogue number	
Device serial number	
Storage temperature range	
Storage humidity range	
Magnetic Resonance (MR) unsafe	
Type BF equipment (protection from electrical shock)	
Radio communication	
Pump: Protected against the effects of continuous immersion in water (12 feet or 3.6 meters for 24 hours).	IPX8
Signifies compliance with Australian EMC, EME and Radio communications requirements	
Signifies compliance with Industry Canada EMC and Radio communications requirements	IC
This symbol means that the device fully complies with MDD 93/42/EEC (NB 0459) and R&TTE Directive 1999/5/EC.	CE 0459

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appendix a: end user software license agreement

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End user software license agreement

End user software license agreement

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glossary

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Glossary

active insulin	Bolus insulin that has been delivered by the pump and is still working to lower your blood glucose levels.
active insulin adjustment	The amount of insulin that is subtracted from your BG correction bolus to account for the active insulin that is tracked by the Bolus Wizard.
Active Insulin Time	A Bolus Wizard setting that lets you set the length of time that bolus insulin is tracked as active insulin.
Activity Guard	An attachment that can be used to ensure that the reservoir stays secure during activity, or when the pump is worn by a child.
Airplane Mode	A feature that temporarily stops your device from communicating wirelessly.
alarm	An audible beep or vibration with a message to inform you that the pump is no longer delivering insulin. Alarms require immediate action.
Alarm History	A feature that stores information about recent alarms and alerts.
alert	An audible beep or vibration with a message to inform you of a situation that may require your attention.
Alert before low	An alert that occurs when you are approaching your low sensor glucose value.
Alert Limits	The values that you set to determine when low and high glucose alerts are triggered.

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Alert on low	An alert that occurs when your sensor glucose value reaches or falls below your low limit.
Auto Suspend	An alarm that you set to suspend insulin delivery and trigger an alarm if no buttons are pressed for a specified period of time. Clearing the alarm resumes insulin delivery.
Awake mode	A state in which the pump screen is on. Unless you are actively using another screen, your Home screen appears.
basal insulin	Insulin that is continuously delivered by the pump to meet your individual insulin needs between meals and during sleep.
basal pattern	A set of one or more basal rates that covers a 24-hour period.
basal rate	The amount of continuous basal insulin that you program your pump to automatically deliver per hour.
BG	Abbreviation for blood glucose. See *blood glucose*.
BG Targets	The high and low values to which your blood glucose is corrected when using the Bolus Wizard.
Block Mode	A feature that restricts the ability to change all settings. You can still perform certain functions, such as suspending insulin delivery, reviewing history, testing your pump, or clearing alarms and alerts.
blood glucose (BG)	Refers to glucose (sugar) that is present in the blood, commonly measured by a blood glucose meter.
blood glucose meter	A device that measures glucose levels in the blood.
Bolus BG Check reminder	A reminder that you set just after you program a bolus. The reminder notifies you to check your blood glucose when the time period that you specified has passed.
bolus insulin	Insulin used to cover an expected rise in glucose levels from carbohydrates, or to lower a high blood glucose value down to your target range.
Bolus Speed	A feature that lets you choose the speed at which your device delivers bolus insulin.

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Bolus Wizard	A feature that uses your individual Bolus Wizard settings to calculate an estimated bolus amount based on the BG values and carbs that you enter. These settings include Carb Ratio, Insulin Sensitivity Factor, BG Target Range, and Active Insulin Time.
calibrate	The process of using a meter blood glucose reading to calculate sensor glucose values.
Calibration reminder	A reminder you can set to let you know when your next calibration is due.
cannula	Short, thin, and flexible tube placed in the tissue below the skin. Insulin is delivered through the cannula into the body.
carb ratio	The number of grams of carbohydrates covered by one unit of insulin. The carb ratio is used to calculate bolus amounts.
carb unit	The unit of measure for carbohydrates, either grams (g) or exchanges (exch).
CGM	Abbreviation for continuous glucose monitoring. See *continuous glucose monitoring*.
continuous glucose monitoring (CGM)	A monitoring tool that uses a glucose sensor placed below the skin to continuously measure the amount of glucose in your interstitial fluid.
correction bolus	Insulin used to lower a high blood glucose value down to your target range.
Daily History	A feature that displays the actions that you performed using your device.
Dual Wave™ Bolus	A type of bolus that provides a dose of insulin delivered as a combination of a Normal Bolus followed by a Square Wave Bolus.
Easy Bolus™	A feature that lets you deliver a Normal Bolus in preset increments using only audio or vibrate confirmation.
Event Marker	A feature that allows you to record events, such as blood glucose readings, injections, carbohydrates, and exercise.

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exchange ratio	The number of insulin units that are needed to cover 1 carbohydrate exchange. The exchange ratio is based on your individual needs and is used to calculate bolus amounts.
food bolus	A dose of insulin you give to cover an expected rise in glucose levels from carbohydrates.
High limit	The value you set to determine when the pump will alert you of a high sensor glucose condition.
infusion set	Tubing that connects to the reservoir on one end, and has a needle or cannula on the other end, that you insert into your body. Insulin travels from the pump through the infusion set into your body.
infusion site	The location on the body where the infusion set is inserted.
insulin sensitivity factor	The amount that blood glucose is reduced by one unit of insulin. The insulin sensitivity factor is used to calculate correction bolus amounts.
interstitial fluid	The fluid that surrounds the cells in the body.
ISIG	The signal created by the sensor that is used to calculate your sensor glucose value. Typically used by Medtronic technical support representatives when troubleshooting.
lock	A pump feature that prevents accidental button presses.
Low limit	The value you set to determine when the pump will alert of a low sensor glucose condition, and also used for determining if insulin delivery should be suspended.
Manual Bolus	A feature that allows you to enter and deliver a dose of insulin in the amount that you have determined is necessary.
Max Basal Rate	A feature that allows you to set the maximum amount of basal insulin that can be delivered per hour.
Max Bolus	A feature that allows you to set the maximum bolus amount that can be delivered in one dose.
meter	A term for any blood glucose meter.

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Missed Meal Bolus reminder	A reminder that a bolus was not delivered during time periods that you specify, often set around your meal times.
Normal Bolus	A type of bolus that provides an entire dose of insulin immediately.
notifications	All notifications are designed to get your attention and convey different types of information. They include alarms, alerts, reminders, and messages.
occlusion	A blockage or crimp of the cannula or tubing that prevents proper insulin flow.
piston	The part of the insulin pump that engages the reservoir and moves insulin through the tubing.
Power save mode	A state in which your pump is fully functional, but the screen goes dark to save power. You can set how long it takes for your screen to enter power save mode by changing the Backlight setting.
Preset Bolus	A feature that allows you to set up and save a bolus for specific meals or snacks that you frequently eat or drink.
Preset Temp Basal	A feature that allows you to set up and save temporary basal rates for repeated use.
Rate alert	An alert that notifies you if your sensor glucose value has been rising or falling faster than the Rise Limit or Fall Limit that you have set.
reminder	A type of notification that you can set to help you remember to do something.
reservoir	The small container that you fill with insulin and insert into your delivery device.
Resume basal alert	An alert that can be set to occur when your pump has automatically resumed basal insulin delivery after a Suspend before low or Suspend on low event because your sensor glucose values have met the necessary criteria. This alert will always occur if basal insulin delivery has resumed because the two hour maximum suspend time has elapsed.

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Rewind	A feature used when changing a reservoir. It returns the piston to its starting position and allows a new reservoir to be placed into the pump.
sensitivity	See *insulin sensitivity factor*.
sensor (glucose sensor)	The small part of the continuous glucose monitoring system that you insert just below your skin to measure glucose levels in your interstitial fluid.
sensor glucose (SG)	Refers to glucose (sugar) that is present in the interstitial fluid and is measured by a glucose sensor.
Set Change reminder	A reminder that you can set to change your infusion set.
SG	Abbreviation for sensor glucose. See *sensor glucose*.
Sleep mode	A state in which your pump is fully functional, but the screen is dark. Your pump automatically enters sleep mode when you have not pressed any buttons for about two minutes.
SmartGuard™	A feature that can automatically stop and resume insulin delivery based on your sensor glucose values and low limit.
Square Wave™ Bolus	A bolus delivered evenly over a specified time period.
Suspend before low	A feature that suspends insulin delivery when the sensor predicts sensor glucose value is approaching your low limit.
Suspend Delivery	This feature stops all insulin delivery until you resume it. Only the basal insulin restarts when delivery is resumed.
Suspend on low	A feature that suspends insulin delivery when your sensor glucose value reaches or falls below your low limit.
Temp Basal Rate (temporary basal rate)	A feature that allows you to temporarily increase or decrease your current basal rate for a duration of time that you specify.
transfer guard	The plastic piece that comes attached to the reservoir. It is used to connect the reservoir to the insulin vial while filling the reservoir with insulin.

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transmitter	A device that connects to a glucose sensor. The transmitter collects data measured by the sensor and wirelessly sends this data to monitoring devices.

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